

Urban Water Management Plan 2010 Update

Prepared for
Valley Center Municipal Water District
Valley Center, California
July 2011

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List of Abbreviations

AB 3616	Agricultural Efficient Water Management Memorandum of Understanding	Plan	Urban Water Management Plan
ac-ft/yr	acre-feet per year	RCD	Resource Conservation District
BMP	Best Management Practice	RFP	Request for Proposal
		RUWMP	Regional Urban Water Management Plan
		RWFMP	Regional Water Facilities Master Plan
CAFR	Comprehensive Annual Financial Report		
CALFED	CALFED Bay Delta Authority	SANDAG	San Diego Association of Governments
cfs	Cubic feet per second	SCCWRRS	Southern California Comprehensive Water Reclamation and Reuse Study
CIMIS	California Irrigation Management Information System	SDCWA	San Diego County Water Authority
CRA	Colorado River Aqueduct	SRF	State Revolving Fund
CUWCC	California Urban Water Conservation Council	SWP	State Water Project
District	Valley Center Municipal Water District	TDS	total dissolved solids
DMP	Drought Management Plan		
DPLU	San Diego County Department of Planning and Land Use	WLRP	Water Reclamation Loan Program
DWR	California Department of Water Resources	WSDM Plan	Water Surplus and Drought Management Plan
EDU	Equivalent Dwelling Unit	VCMWD	Valley Center Municipal Water District
EIS/EIR	Environmental Impact Statement/Environmental Impact Report		
ERP	Emergency Response plan		
ESP	Emergency Storage Project		
ETo	Evapotranspiration		
EWA	Environmental Water Account		
IAWP	Interruptible Agricultural Water Program		
IRP	Integrated Resources Plan		
M&I	Manufacturing and Industrial		
MOA	Memorandum of Agreement		
MOU	Memorandum of Understanding		
mg/L	milligrams per liter		
MAIN	Municipal and Industrial Needs		
MWD	Metropolitan Water District		

Section 1

Introduction

This Urban Water Management Plan (Plan) has been prepared for the Valley Center Municipal Water District (District, VCMWD) as an update for the year 2010, as required by the Urban Water Management Planning Act (Act) (California Water Code Division 6, Part 2.6, Sections 10610 through 10657) and as most recently modified by Senate Bill X7-7 (SBX7-7).

It should be noted that this Plan is primarily for the urban water use component; i.e., residential, commercial, and public. As a signatory to the Agricultural Efficient Water Management Memorandum of Understanding (AB 3616), agricultural water management issues and practices are covered in more detail in the Agricultural Water Management Plan. However, for completeness, this Plan does provide some background information on the agricultural conservation efforts.

This chapter provides an overview of the Act and descriptions of agency coordination, public participation, Plan adoption, resource maximization and import minimization, and Plan organization. Sections directly pertaining to the California Department of Water Resources UWMP Guidebook checklist include the checklist item in italics.

1.1 Urban Water Management Planning (UWMP) Act

The UWMP Act became part of the California Water Code with the passage of Assembly Bill 797 during the 1983–1984 regular session of the California legislature. Subsequently, assembly bills between 1990 and 2009 amended the Act. Most recently, the Act was amended in November 2009 by SBX7-7. The Act requires every urban water supplier providing water for municipal purposes to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually to adopt and submit an Urban Water Management Plan every five years to the California Department of Water Resources (DWR). According to DWR, the Act states that these urban water suppliers should make every effort to assure the appropriate level of reliability in its water service is sufficient to meet the needs of its various categories of customers during normal, dry, and multiple dry years. The Act describes the contents of the Plan as well as how urban water suppliers should adopt and implement the Plan.

This Plan is the formal document to satisfy the year 2010 requirements of the Act. This 2010 Plan describes the availability of water and discusses water use, reclamation, and water conservation activities. The Plan concludes that the water supplies available to the Valley Center Municipal Water District's (District's) customers are adequate over the next 20-year planning period. Although submitted in 2011, the Plan is referred to as the 2010 Plan because the UWMP Act requires water agencies to prepare an UWMP every five (5) years. The Plan will retain consistency with the five-year submittal cycle.

In addition, the passage of SBX7-7 (hereafter referred to as the Water Conservation Bill of 2009) requires urban water suppliers to report their baseline per capita water use and select a per capita water use target. It should also be noted that changes to California law require that, beginning in 2016, water suppliers must comply with the Water Conservation Bill of 2009 in order to be eligible for State water grants or loans.

1.2 Public Participation

#6. Every urban water supplier required to prepare a plan pursuant to this part shall, at least 60 days prior to the public hearing on the plan required by Section 10642, notify any city or county within which the supplier provides water supplies that urban water supplier will be reviewing the plan and considering amendments or changes to the plan. The urban water supplier may consult with, and obtain comments from, any city or county that receives notice pursuant to this subdivision (10621(b)).

#54. The urban water supplier shall provide that portion of its urban water management plan prepared pursuant to this article to any city or county within which it provides water supplies no later than 60 days after the submission of its urban water management plan (10635(b)).

#56. Prior to adopting a plan, the urban water supplier shall make the plan available for public inspection and shall hold a public hearing thereon. Prior to the hearing, notice of the time and place of the hearing shall be published within the jurisdiction of the publicly owned water supplier pursuant to Section 6066 of the Government Code. The urban water supplier shall provide notice of the time and place of hearing to any city or county within which the supplier provides water supplies. A privately owned water supplier shall provide an equivalent notice within its own service area (10642).

As required by the Act, prior to adopting this Plan, the District made the Plan available for public inspection and held a public hearing. A 60 day notification was provided to the agencies presented in Table 1.1 on April 20, 2011. This hearing provided an opportunity for District's customers including social, cultural, and economic community groups to learn about the water supply situation and the plans for providing a reliable, safe, high-quality water supply for the future. The hearing was an opportunity for people to ask questions regarding the current situation and the viability of future plans.

A Notice of Public Hearing was published twice in the local Valley Center Roadrunner newspaper to notify all customers and local government agencies of the public hearing and copies of the Plan were made available for public inspection at the District's Administrative Offices as well as the Valley Center Public Library. A copy of the Notice of Public Hearing, outreach documents and published Public comments regarding the Plan are also included in Appendix A. A copy of the 2010 UWMP will be provided to any city or county, within which the District provides water supplies 60 days after submission to DWR.

This Plan was adopted by the District's Board of Directors on June 20, 2011. A copy of the adopted resolution is provided in Appendix B. The adopted Plan was provided to DWR and the appropriate cities and counties within 30 days of adoption.

1.3 Agency Coordination

#4. Each urban water supplier shall coordinate the preparation of its plan with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies to the extent practicable (10620(d)(2)).

#55. Each urban water supplier shall encourage the active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of its plan (10642).

The Act requires the District to coordinate the preparation of its Plan with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable. While preparing the 2010 Plan, the District coordinated its efforts with several appropriate agencies to ensure that data and issues were presented accurately. This included coordinating with the San Diego County Water Authority (SDCWA) regarding projected imported water deliveries. The District's Plan was sent to the SDCWA, San Diego County Department of Planning and Land Use (DPLU), City of Escondido and Rincon Del Diablo Municipal Water

District and the agencies' were requested to review and provide comments on the document. Table 1-1 provides a summary of the Plan coordination with the appropriate agencies.

Table 1-1. Coordination with Appropriate Agencies (DWR Table 1)							
Coordinating Agencies	Participated in developing the Plan	Commented on the draft	Attended public meetings	Was contacted for assistance	Was sent a copy of the Plan	Was sent a notice of intention to adopt	Not Involved / No Information
SDCWA	X			X	X	X	
City of Escondido					X	X	
DPLU					X	X	
Rincon Del Diablo Municipal Water District					X	X	

The final Adopted Plan will be submitted to the California State Library and will be available to the public within 30 days of submitting to DWR (per page 1-3 of the Guidebook).

1.4 Resource Maximization and Import Minimization

Water management tools have been used by the District to maximize local water resources. Programs in which the District participates to maximize water resources are described as follows:

- California Urban Water Conservation Council (CUWCC) – The District is a participant in the CUWCC. The CUWCC was created to increase efficient water use statewide through partnerships among urban water agencies, public interest organizations, and private entities. The CUWCC's goal is to integrate urban water conservation Best Management Practices (BMPs) into the planning and management of California's water resources. A historic Memorandum of Understanding (MOU) was signed by nearly 100 urban water agencies and environmental groups in December, 1991. Since then the CUWCC has grown to 389 members, including the District. Those signing the MOU pledge to develop and implement fourteen comprehensive conservation BMPs.
- Agricultural Water Audit Program – The District participates in this program through the Mission Resource Conservation District (RCD). The RCD mobilizes staff to add pressure regulators to balance pressure throughout the system. Grove irrigation systems are also inspected.
- University of California – Davis Extension Program – The District is participating in the Pulse Irrigation Research Sensor Program, which uses pulse sensors to determine water needs based on soil moisture content.

The benefits of the program described above and the documents developed as a result of these programs are water management tools that the District uses to maximize their available local water resources.

1.5 Plan Implementation

#7. Provide supporting documentation that the UWMP or any amendments to, or changes in, have been adopted as described in Section 10640 et seq. (10621(c)).

#57. Provide supporting documentation that the plan has been adopted as prepared or modified (10642).

#58. Provide supporting documentation as to how the water supplier plans to implement its plan (10643).

#59. Provide supporting documentation that, in addition to submittal to DWR, the urban water supplier has submitted this UWMP to the California State Library and any city or county within which the supplier provides water supplies a copy of its plan no later than 30 days after adoption. This also includes amendments or changes (10644(a)).

#60. Provide supporting documentation that, not later than 30 days after filing a copy of its plan with the department, the urban water supplier has or will make the plan available for public review during normal business hours (10645).

As stated above, the Notice of Public Hearing was published twice in the local Valley Center Roadrunner newspaper and copies of the Plan were made available for public inspection at the District's Administrative Offices as well as the Valley Center Public Library. A copy of the Notice of Public Hearing, outreach documents and published Public comments regarding the Plan are also included in Appendix A. A copy of the 2010 UWMP will be provided to any city or county, within which the District provides water supplies 60 days after submission to DWR. A copy of the adopted resolution is provided in Appendix B. The District shall implement the adopted Plan in accordance with the schedule described in this Plan.

1.6 Plan Organization

Below is a summary of the sections in this Plan:

- Section 2 provides a description of the service area, climate, water supply facilities, distribution system, and historical and projected population.
- Section 3 presents historical and projected water use.
- Section 4 describes the water supplies.
- Section 5 describes recycled water.
- Section 6 addresses water conservation.
- Section 7 provides a comparison of future water supply to demand.
- Section 8 presents the District's water shortage contingency plan.
- Section 9 provides a list of references.
- Appendices A through L provide relevant supporting documents.

DWR has provided a checklist of the items that must be addressed in each Plan based upon the Act. This checklist makes it simple to identify exactly where in the Plan each item has been addressed. The checklist is completed for this Plan and provided in Appendix F. It references the sections and page numbers where specific items can be found.

Section 2

Description of Existing Water System

This chapter describes the District's system. It contains a description of the service area and its climate. This section also describes the water supply facilities, including the surface water supply facilities, booster pumping stations, reservoirs, and the piping system.

2.1 Description of Service Area

#8. Describe the service area of the supplier (10631(a)).

The unincorporated community of Valley Center covers an area of approximately 100 square miles of which approximately 58 percent receives water service from the District. The District imports nearly 100 percent of its water from the SDCWA. The District currently ranks as SDCWA's fourth largest retailer of imported water behind the City of San Diego, Helix Water District, and Otay Water District. As of June 30, 2010, the District serves 9,807 active water meters (including 1,031 residential fire protection meters) for a net 8,776 active water service accounts. The District is also the largest retail purchaser of agricultural water within SDCWA's service area.

Agricultural use is approximately 18,765 acres (34 percent of the total acreage) and is predicted to decline by as much as 75 percent by 2050, offset by significant increases in land utilized for Low Density Single Family housing as well as typical Single Family housing (San Diego Association of Governments [SANDAG]). By 2035, agriculture is projected to be approximately 13,585 acres, a reduction of over 27 percent. Present District boundaries, which define the study area for this Plan, are shown on Figures 2-1 and 2-2.

Valley Center Municipal Water District Vicinity Map

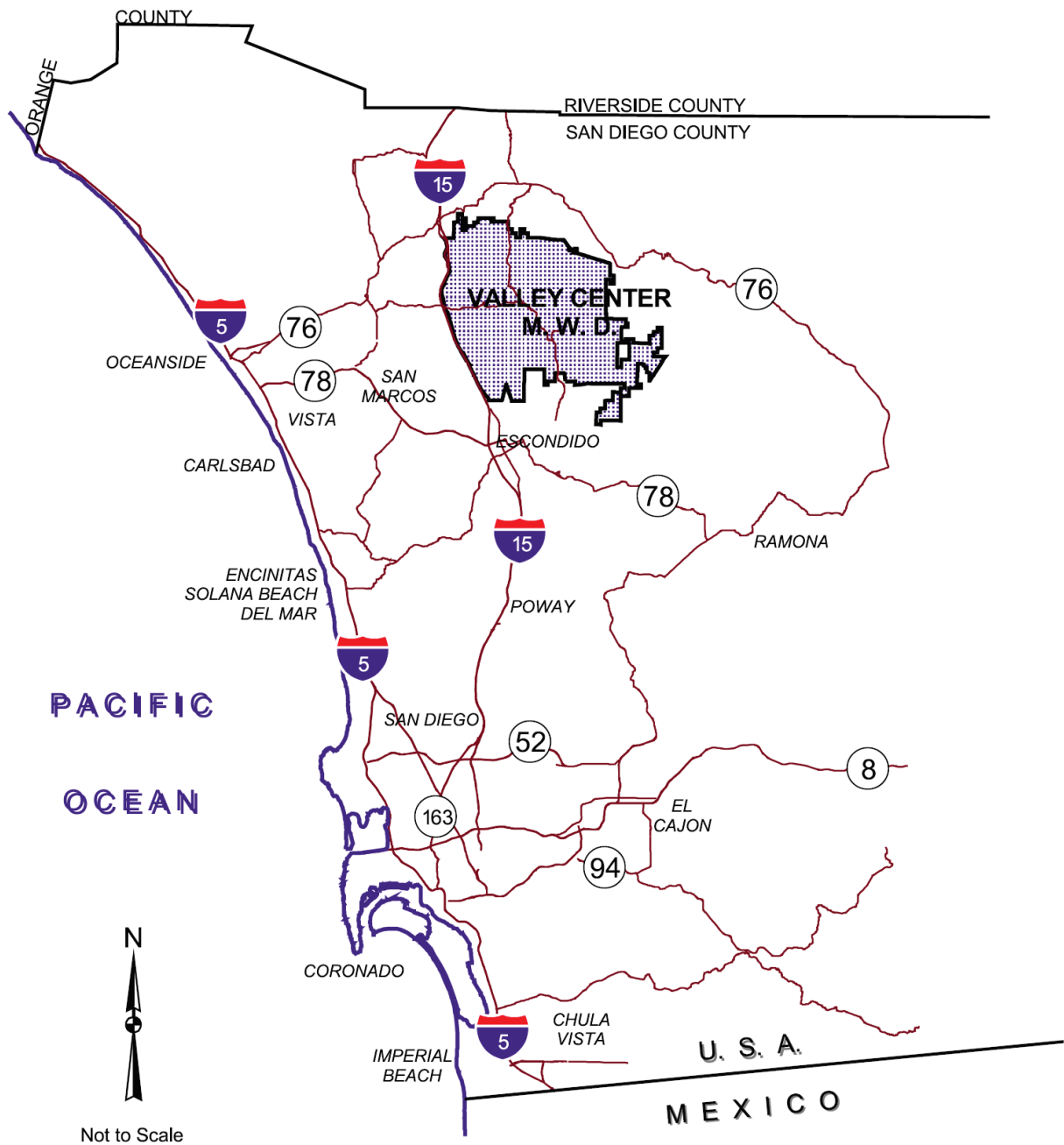


Figure 2-1. Vicinity Map

Source: VCMWD

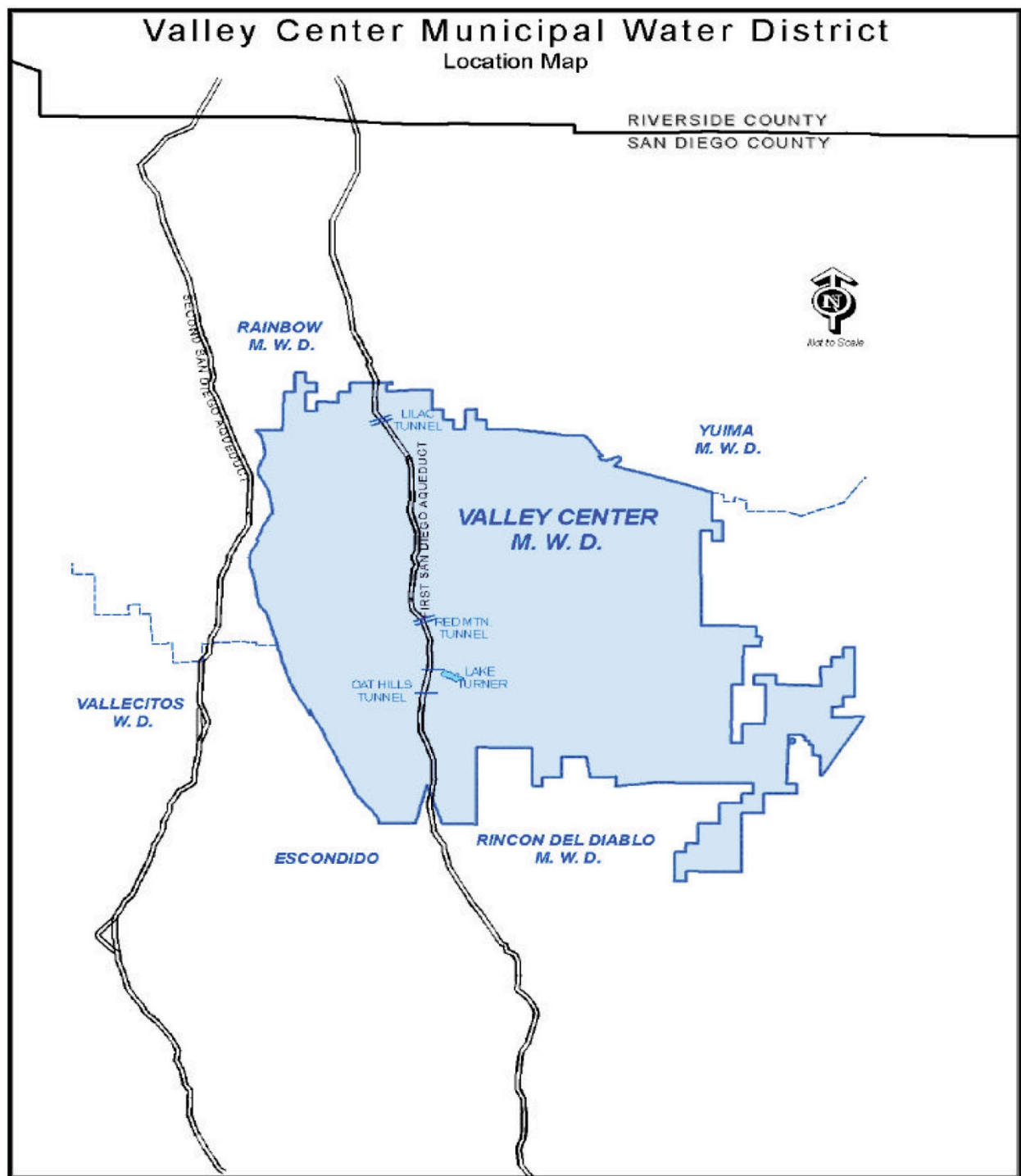


Figure 2-2. Location Map

Source: VCMWD

2.2 Local Climate

#9. (Describe the service area) climate (10631(a)).

Valley Center is a semi-arid area characterized by hot dry summers and mild winters, although temperatures do occasionally fall below freezing. A typical summer month's high temperatures average from the low to mid 90 degrees Fahrenheit range. Over the last 20 years, rainfall has averaged around 12 inches per year. Following the 1986-91 drought, the area received significantly higher than average rainfall in 1993, 1995, and 1998. The 2009/2010 wet season experienced the average amount of rainfall. Table 2-1 shows the variation of the annual temperature, precipitation, and evapotranspiration (ETo) over the last 12 years as reported from a weather station located in Escondido, California, and compiled by the Western Region Climate Center. ETo data was obtained from the CIMIS website.

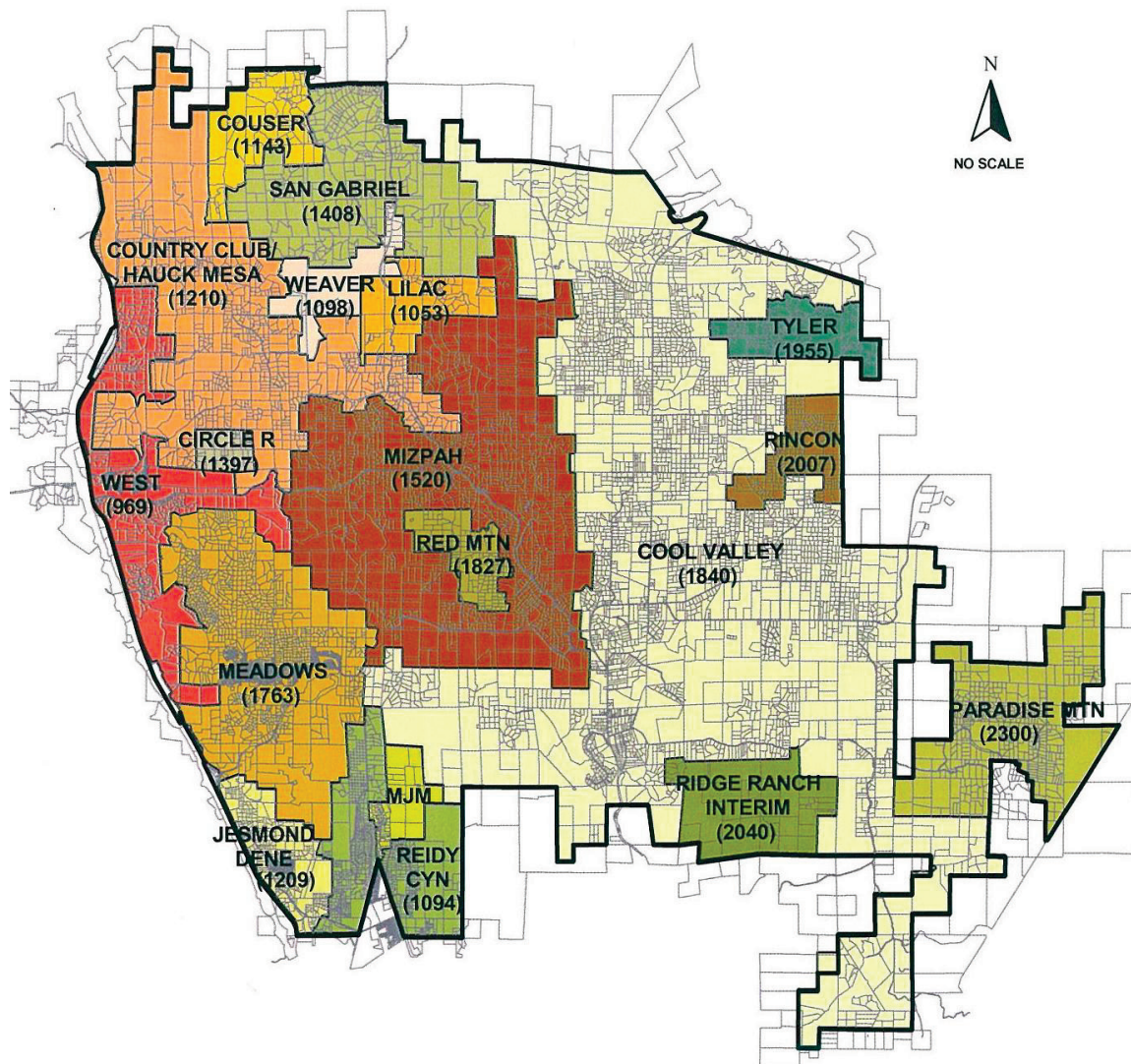
Table 2-1. Precipitation and Temperature Records, 1999-2010			
Year	Average Temperature (F) ¹	Total Rainfall (inches) ²	Standard Yearly Average ETo ¹
2010	61.46	14.04	5.09
2009	60.32	5.94	4.37
2008	61.78	4.22	4.68
2007	60.32	4.32	4.72
2006	60.78	3.54	4.53
2005	66.23	17.42	4.58
2004	60.48	14.49	4.69
2003	62.82	13.00	4.47
2002	63.84	5.83	4.63
2001	65.11	11.68	4.32
2000	65.99	4.81	4.32
1999	63.75	6.62	4.73

¹ Based on the Escondido, California Station, CIMIS

² Based on the Escondido 2, California (COOP) Station, Western Region Climate Center

2.3 Distribution System

This section discusses the District's distribution system, including storage, pump stations, and interconnections. As a result of steeply varying topography, the District's water distribution system is hydraulically divided into 18 pressure zones, the general boundaries of which are shown on Figure 2-3. Within the pressure zones are 13 pressure regulated areas, as shown on Figure 2-4. The system includes over 297 miles of water main pipe ranging in size from 8 inches to 42 inches in diameter. Within these pressure zones, the District currently operates a total of 42 storage facilities (ranging in size from 100,000 gallons to 55.9 million gallons), 26 pump stations, 22 pressure-reducing stations, and one hydropneumatic tank to meet the needs of their customers. District water and sewer systems are shown on Figure 2-5.



HYDRAULIC GRADES ARE SHOWN IN PARENTHESES

Figure 2-3. General Boundaries of 18 Pressure Zones

Source: VCMWD Water Master Plan

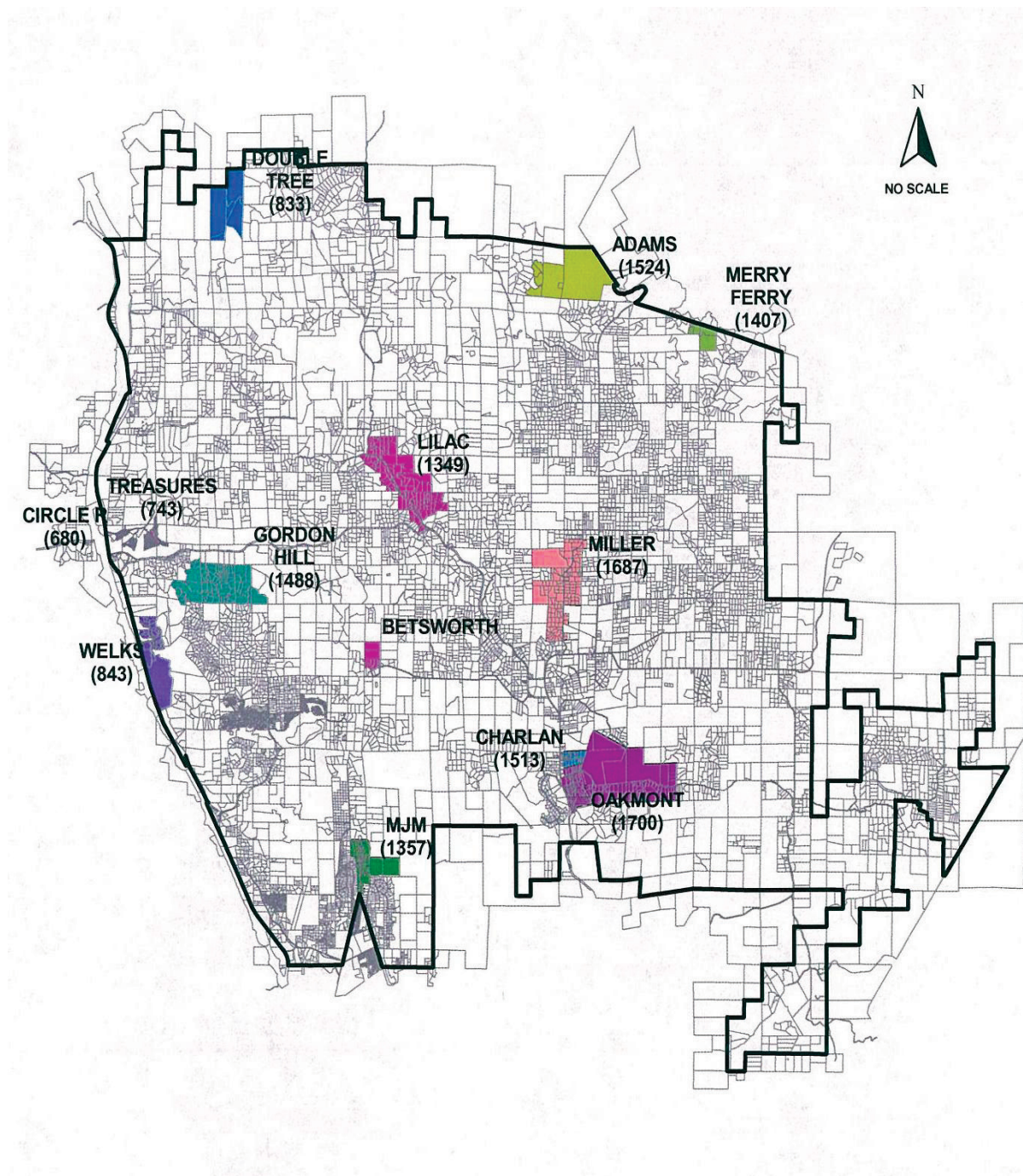


Figure 2-4. Pressure Regulated Areas

Source: VCMWD Water Master Plan

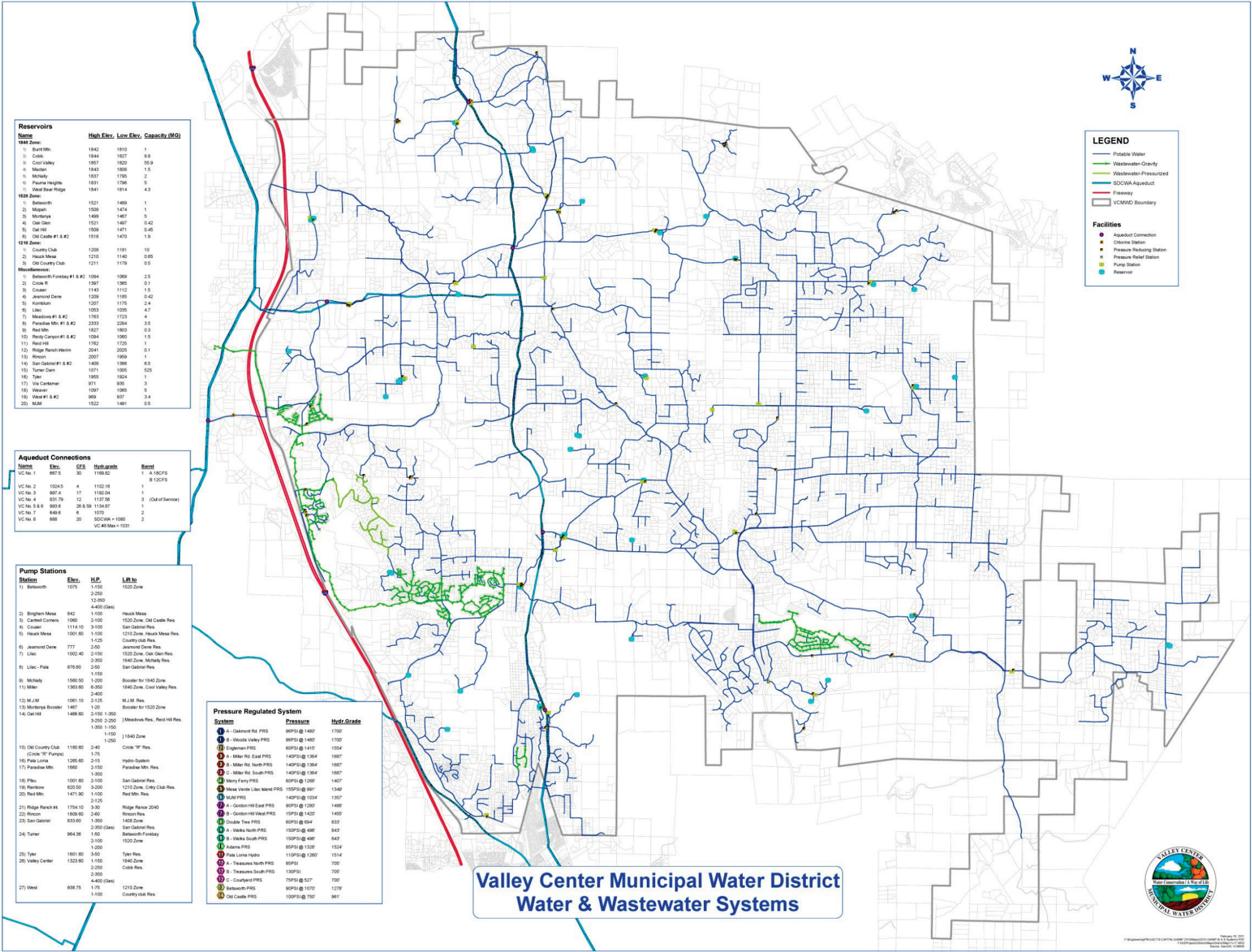


Figure 2-5. Water and Sewer Systems

Source: VCMWD

There are a substantial number of interconnections and a high degree of interdependency between most of the zones. For example, the Paradise Mountain zone, which is connected directly to the Cool Valley Zone at the Paradise Mountain Pump Station, is typically served by aqueduct connections VC No. 5 and VC No. 6 via the Mizpah Zone. However, it could also be served from VC. No. 1-B via the Lilac Zone, or more indirectly from VC No. 4 and VC No. 7 via the West Zone. This degree of flexibility is useful in that it provides the ability to handle a variety of supply and demand situations.

Table 2-2 below provides detail of each of the facilities maintained by the District.

Table 2-2. Water System Selected Information	
Information	Capacity
Service Area	100 square miles
Miles of Water Main (8" and larger)	297
Number of Closed Reservoirs	42
Maximum Closed Reservoir Capacity	421 ac-ft
Number of Open Reservoirs ¹	1
Maximum Capacity of Open Reservoir	1,612 ac-ft
Number of Meters in Service ²	9,796
Number of Pump Stations	26
Number of Pumps	96
Total Pump Capacity	19,785 horsepower

¹Open reservoir used for storage of non-potable water only (Lake Turner)

² Includes 1,017 residential fire service meters

Source – June 30, 2010 CAFR and VCMWD 2010-2011 Budget

A cluster of three of the zones, the Jesmond Dene, Reidy Canyon and MJM, are interconnected with each other, but are connected to the remainder of the system only through a pressure-reducing facility at the Jesmond Dene Bypass Station. This connection provides an alternate source of water under emergency conditions. These zones are generally served from the VC No. 2 aqueduct connection and operate essentially as an independent system.

Section 3

Historical and Projected Water Use

Water demand projections along with fire-flow requirements provide the basis for sizing and staging future water facilities. Water use and production records, combined with projections of population, employment, and urban development, provide the basis for estimating future water supply requirements. This chapter presents an analysis of available demographic and water use data, customer connections, historical groundwater and surface water production, unit water use, and the resulting projections for future water supply needs for the District.

3.1 Population, Employment, and Housing

#10. (Describe the service area) current and projected population...The projected population estimates shall be based upon data from the state, regional, or local service agency population projections within the service area of the urban water supplier...(population projections) shall be in five-year increments to 20 years or as far as data is available (10631(a)).

#11. (Population Projections) shall be in five-year increments to 20 years or as far as data is available (10631 (a)).

#12. Describe...other demographics factors affecting the supplier's water management planning (10631 (a)).

In order to be able to provide for the area's future water demands and water use characteristics, it is important to have reasonable estimates of future population totals and future regional trends. To develop these projections, historic population and water use information was analyzed. Information from the SANDAG provided current estimates and forecasts of population, housing, employment, land use, and other planning data. Additional data were available from various in-house documents, including the 2002 Water Master Plan and Strategic Plan. With this information, the District has developed reasonable estimates of future water demands.

Water use in the San Diego region is closely linked to the local economy, population growth, and climatic factors. Southern California experienced dramatic economic growth during the 1970s and 1980s, and the resulting influx of new population produced increased long-term water demands. In the 1990s, however, the rate of economic growth declined due to the severity and duration of the recession, which in California was led by declines in manufacturing, particularly the defense and aerospace industries. However, due to the economic turndown, developer projects and new housing starts have declined, and the population growth previously experience has declined. Recent records show that the population in the District area grew by only 863 people between 2005 and 2010, an increase of only 3 percent over the five-year period. This slower than anticipated growth rate is now reflected in current population projections for the area.

Since the 2005 Plan was prepared, the projected population figures for the District have been revised to substantially lower numbers. In 2005, the projected population for the VCMWD area was 33,613 for year 2020. As indicated in Table 3-1, the current population projection for year 2020 is now 29,041 (SANDAG 2010), a decrease of 4,572 or 13.6 percent.

Table 3-1. Population History/ Projections Valley Center Municipal Water District (DWR Table 2)								
Year	2005	2010	2015	2020	2025	2030	2035	Data Source
Population	23,797	25,378	25,785	29,041	32,564	36,400	40,486	SANDAG

Source: SANDAG 2050 Regional Growth Forecast, 2010.

According to the June 30, 2010 Comprehensive Annual Financial Report (CAFR), the estimated District population is currently 25,378 and is projected to grow to 29,041 by 2020.

In the SANDAG 2050 Regional Growth Forecast, SANDAG is projecting that most of the anticipated growth within the District will be in occupied housing units, which is expected to increase by 96 percent over 2008 levels by 2050. Occupied single family housing units were established at 6,529 units in 2008 and are projected to be 13,285 units in the year 2050. Occupied multiple family units were set at 77 units for 2008 and are projected to be 769 units in the year 2050; this represents a 899 percent increase in multi family units. Occupied mobile homes are projected to increase slightly from 1,090 units in year 2008 to 1,126 units in the year 2050.

SANDAG predicts an increase in land utilized for single family housing (from 667 acres in 2008 to 1,169 acres in 2050, a 189 percent increase over the 40-year period). In addition, there were 21,255 acres of vacant developable land available in 2008. There will only be 1,437 acres available in 2050—a decrease of 93 percent. These predictions confirm the expected transition from a predominantly agricultural area to that of large single-family homes and mixed agricultural/residential usage.

3.2 Historical Water Use

#25. Quantify, to the extent records are available, past and current water use, and projected water use (over the same five-year increments described in subdivision (a)), identifying the uses among water use sectors, including, but not necessarily limited to , all of the following uses: (A) Single-family residential; (B) Multifamily; (C) Commercial; (D) Industrial; (E) Institutional and governmental; (F) Landscape; (G) Sales to other agencies; (H) Saline water intrusion barriers, groundwater recharge, or conjunctive use, or any combination thereof; (I) Agricultural (10631(e)(1) and(2)).

Records of historical water production obtained from the District serve as the basis for developing unit water demands for the District. Water production is the volume of water measured at the source, which includes all water delivered to residential, commercial, and public authority customers, as well as unaccounted-for water.

The District has identified that the community is in transition from a predominantly agricultural region to a combined agricultural and residential community, with the potential for greater residential water needs in the future. Agriculture water use in 2000 accounted for 83 percent of water sales; in 2010, agriculture water use only accounted for 73 percent of water sales.

With the ongoing re-evaluation of the existing land use designations for the community, it is anticipated that zoning changes will impact the area's water supply master planning efforts. Planning and designing for future water, wastewater, and reclamation needs will require conservative and sound planning strategies to effectively accommodate anticipated future conditions.

For 20 years, the District experienced a steady increase in water demands, from 14,372 ac-ft per year (ac-ft/yr) in fiscal year 1969-1970 to a record high of 52,535 ac-ft/yr for fiscal year 1989-1990. Despite some population growth, however, water demands from 1991 to 1995 were below the projections made in the 1990 Plan Update. The decreasing water use during this time can be attributed to the poor economy, the six-year drought of 1986-1991, and implemented water conservation measures.

Water demand fluctuated during the 2005-2009 period. Average water purchased ranged from 29,522 ac-ft in 2009-2010 to 50,511 ac-ft in 2006-2007. Average water demand during the period 2005-2009 was approximately 39,816 ac-ft/yr. The recent decline in water demand is in part due to the slow down in the economy, the decline in developer projects, the lack of new housing starts, and water restrictions coupled with increasing wholesale water rates. Retail water rates have increased 80 percent since 2005. This has forced many growers in the District to cease operations. A 2009 California Avocado Commission study found that in 2005, there were 8,881 acres of productive avocados in the District compared to 6,667 in 2009, a decrease of 25 percent (2010 CAFR). This reduction has been experienced amongst other growers as well, such as citrus growers.

The District, like the rest of the country, state, and county, is experiencing the effects of the slow down in the economy. Although the District established 54 new meter accounts during 2009-10, there were only 8,776 revenue generating meters at the close of the fiscal year, a slight decrease of 3 meters from 2008-09. The following information pertains to the metering program in the District:

- All water services are metered and billed at a single rate per unit for all consumption.
- Meters are limited to maximum 3-inch capacity, except for special applications (mobile home parks, hotels, resorts, condominiums).
- Construction meters are read and monitored monthly.
- Construction meters are periodically refurbished and/or replaced.
- A portable test and repair unit is utilized for in-field testing and calibration of 1 1/2-inch through 3-inch meters.
- Meter use is matched to optimum flow ranges to reduce excessive meter wear and resulting loss.
- A meter exchange program is used to reduce water loss associated with excessive wear.

Historical connections by customer classification are presented in Table 3-2. Past and current water use by customer classification is provided in Tables 3-3 through 3-4. See Section 3.4.1 for projected water use by customer classification.

Table 3-2. Connections by Customer Classification			
Customer Classifications	Historical Connections		
	1990	1995	2000
Single family	3,650	4,640	5,135
Multi-family	54	98	96
Commercial	184	149	290
Industrial	0	0	0
Institutional and Governmental	11	18	27
Landscape/Recreation	0	0	0
Agricultural	2,105	1,489	1,696
Other	0	0	41
Total	6,004	6,394	7,285

Table 3-3. Water Deliveries (DWR Table 3)

Water Use Sectors	2005				
	Metered		Unmetered		Total
	No. of Accounts	Deliveries ac-ft/yr	No. of Accounts	Deliveries ac-ft/yr	Volume ac-ft/yr
Single family	6,380	5,844	--	0	5,844
Multi-family	109	472	--	0	472
Commercial	217	1,258	--	0	1,258
Industrial	0	0	--	0	0
Institutional/Gov	27	185	--	0	185
Landscape	0	0	--	0	0
Agriculture	1,725	28,020	--	0	28,020
Other	135	311	--	0	311
Total Water Use	8,593	36,090	0	0	36,090

Table 3-4. Water Deliveries for 2010, ac-ft/yr (DWR Table 4)

Water Use Sectors	2010				
	Metered		Unmetered		Total
	No. of Accounts	Deliveries ac-ft/yr	No. of Accounts	Deliveries ac-ft/yr	Volume ac-ft/yr
Single family	7,609	5,740	--	0	5,740
Multi-family	235	178	--	0	178
Commercial	371	2,089	--	0	2,089
Industrial	0	0	--	0	0
Institutional/Gov	32	137	--	0	137
Landscape	0	0	--	0	0
Agriculture	1,378	19,666	--	0	19,666
Other	63	27	--	0	27
Total Water Use	9,688	27,837	0	0	27,837

3.3 GPCD Baseline and Targets

#1. An urban retail water supplier shall include in its urban water management plan...due in 2010 the baseline daily per capita water use, urban water use target, interim urban water use target, and compliance daily per capita water use, along with the basis for determining those estimates, including references to supporting data (10608.20(e)).

Per the law as adopted in SBx7-7, the District must establish per capita water use targets using one of four methods:

1. Method 1 – Eighty percent of the urban retail supplier’s baseline per capita daily water use.
2. Method 2 – The per capita daily water use that is estimated using the sum of several defined performance standards.
 - 55 gallons per day (gpd) for indoor residential water use.
 - Water efficiency equivalent to the standards of the Model Water Efficient Landscape Ordinance for landscape irrigated through dedicated or residential meters or connections.
 - A 10 percent reduction in commercial, industrial, and institutional (CII) uses from the baseline CII water use by 2020.
3. Method 3 – Ninety-five percent of the applicable state hydrologic region target, as set forth in the state’s draft 20x2020 Water Conservation Plan.
4. Method 4 – This method develops the target based on indoor residential, CII, outdoor (e.g., agriculture), and water loss components.

The District selected Method 1 to calculate an urban water use target of 1,415 (gallons per capita per day) GPCD by 2020 and an urban water use interim target of 1,592 GPCD by 2015. An analysis of the GPCD target methods is provided in Tables 3-5 through 3-7 (DWR Tables 13, 14, and 15), which includes base period ranges and base daily per capita water use for 5-, 10-, and 15-year ranges.

Table 3-5. Base Period Ranges (DWR Table 13)			
Base	Parameter	Value	Units
10- to 15-year base period	2008 total water deliveries	37,624	see below
	2008 total volume of delivered recycled water	48	see below
	2008 recycled water as a percent of total deliveries	0%	percent
	Number of years in base period ¹	10	years
	Year beginning base period range	1999	
	Year ending base period range ²	2008	
5-year base period	Number of years in base period	5	years
	Year beginning base period range	2004	
	Year ending base period range ³	2008	

acre-feet per year

¹If the 2008 recycled water percent is less than 10 percent, then the first base period is a continuous 10-year period. If the amount of recycled water delivered in 2008 is 10 percent or greater, the first base period is a continuous 10- to 15-year period.

²The ending year must be between December 31, 2004 and December 31, 2010.

³The ending year must be between December 31, 2007 and December 31, 2010.

Table 3-6. Base Daily per Capita Water Use — 10-Year Range (DWR Table 14)

Base period year		Distribution System Population	Daily system gross water use (ac-ft/yr)	Daily system gross water use (mgd)	Annual daily per capita water use (gpcd)
Sequence Year	Calendar Year				
Year 1	1999	20,462	39,195	35.0	1,710
Year 2	2000	20,879	48,550	43.3	2,076
Year 3	2001	22,315	44,598	39.8	1,784
Year 4	2002	22,531	49,524	44.2	1,962
Year 5	2003	22,493	43,675	39.0	1,733
Year 6	2004	22,560	52,182	46.6	2,065
Year 7	2005	23,797	38,105	34.0	1,429
Year 8	2006	24,079	44,767	40.0	1,660
Year 9	2007	24,443	50,511	45.1	1,845
Year 10	2008	24,853	39,500	35.3	1,419
Base Daily Per Capita Water Use					1,768

Table 3-7. Base Daily Per Capita Water Use — 5-Year Range (DWR Table 15)

Base period year		Distribution System Population	Daily system gross water use (ac-ft/yr)	Daily system gross water use (mgd)	Annual daily per capita water use (gpcd)
Sequence Year	Calendar Year				
Year 1	2004	22,560	52,182	46.6	2,065
Year 2	2005	23,797	38,105	34.0	1,429
Year 3	2006	24,079	44,767	40.0	1,660
Year 4	2007	24,443	50,511	45.1	1,845
Year 5	2008	24,853	39,500	35.3	1,419
Base Daily Per Capita Water Use					1,683

3.4 Projected Water Demands

#33. Urban water suppliers that rely upon a wholesale agency for a source of water shall provide the wholesale agency with water use projections from that agency for that source of water in five-year increments to 20 years or as far as data is available. The wholesale agency shall provide information to the urban water supplier for inclusion in the urban water supplier's plan that identifies and quantifies, to the extent practicable, the existing and planned sources of water as required by subdivision (b), available from the wholesale agency to the urban water supplier over the same five-year increments,

and during various water-year types in accordance with subdivision (c). An urban water supplier may rely upon water supply information provided by the wholesale agency in fulfilling the plan informational requirements of subdivisions (b) and (c) (10631(k)).

SDCWA currently provides nearly 100 percent of the water distributed by the VCMWD. Table 3-5 provides the projected amount of water that the VCMWD expects to purchase from SDCWA to meet water demands in the future.

3.4.1 Projected Water Demands

Normal-year water demands through the year 2035 are estimated based on the selected GPCD target chosen by the District as described in Section 3.3 and the projected population (Table 3-1). Current and future water use by customer sector is provided in Tables 3-8 through 3-11. These projections are based on current land use projections from SANDAG; however, based on the rate of decline in water sales for agricultural uses, the District believes that water deliveries for agriculture will be less than presented below. The decline in agricultural water sales will create a surplus of water for the District.

Table 3-8. District Demand Projections to Wholesale Suppliers, ac-ft/yr (DWR Table 12)

Water Supply Sources	2010	2015	2020	2025	2030	2035
SDCWA	29,522	32,497	32,526	34,459	36,401	38,537

Table 3-9. Water Deliveries Projected for 2015, ac-ft/yr (DWR Table 5)

Water Use Sectors	2015				
	Metered		Unmetered		Total
	No. of Accounts	Deliveries ac-ft/yr	No. of Accounts	Deliveries ac-ft/yr	Volume ac-ft/yr
Single family	7,176	7,262	--	0	7,262
Multi-family	114	498	--	0	498
Commercial	514	2,686	--	0	2,686
Industrial	--	0	--	0	0
Institutional/Gov	38	165	--	0	165
Landscape	--	0	--	0	0
Agriculture	1,419	20,733	--	0	20,733
Other	29	15	--	0	15
Total Water Use	9,290	31,359	0	0	31,359

Table 3-10. Water Deliveries Projected for 2020, ac-ft/yr (DWR Table 6)

Water Use Sectors	2020				
	Metered		Unmetered		Total
	No. of Accounts	Deliveries ac-ft/yr	No. of Accounts	Deliveries ac-ft/yr	Volume ac-ft/yr
Single family	8,125	8,599	--	0	8,599
Multi-family	129	686	--	0	686
Commercial	575	3,108	--	0	3,108
Industrial	--	0	--	0	0
Institutional/Gov	42	180	--	0	180
Landscape	--	0	--	0	0
Agriculture	1,382	18,699	--	0	18,699
Other	25	14	--	0	14
Total Water Use	10,278	31,286	0	0	31,286

Table 3-11. Water Deliveries Projected for 2025, 2030, and 2035, ac-ft/yr (DWR Table 7)

Water Use Sectors	2025		2030		2035	
	Metered		Metered		Metered	
	No. of Accounts	Deliveries ac-ft/yr	No. of Accounts	Deliveries ac-ft/yr	No. of Accounts	Deliveries ac-ft/yr
Single family	10,446	10,452	12,310	10,936	15,511	13,734
Multi-family	165	924	243	1,060	294	1,378
Commercial	615	3,220	643	3,790	702	4,061
Industrial	--	0	--	0	--	0
Institutional/Gov	47	200	57	245	65	280
Landscape	--	0	--	0	--	0
Agriculture	1,295	18,440	1,052	18,200	854	17,960
Other	23	13	22	12	19	10
Total Water Use	12,591	33,249	14,326	34,243	17,445	37,423

3.4.2 VCMWD Projected Water Demand

The final demands will vary from year to year depending on many factors including not only growth and development, but also weather patterns, economic conditions, and conservation practices, to name a few. As discussed within this document, the population within the District is expected to gradually increase over the next 20 years, along with a corresponding decrease in agricultural activities. How these trends impact future water demands depends on several factors, including domestic and agricultural water use. The lines in Figure 3-1 represent historical demands, projected demands to SDCWA, and calculations for projections that include annexations, the use of potential local supplies, and the water supply limit from SDCWA for the District (based on 20x2020 estimations.) These historical and projected demands will be included in the updated Water Master Plan.

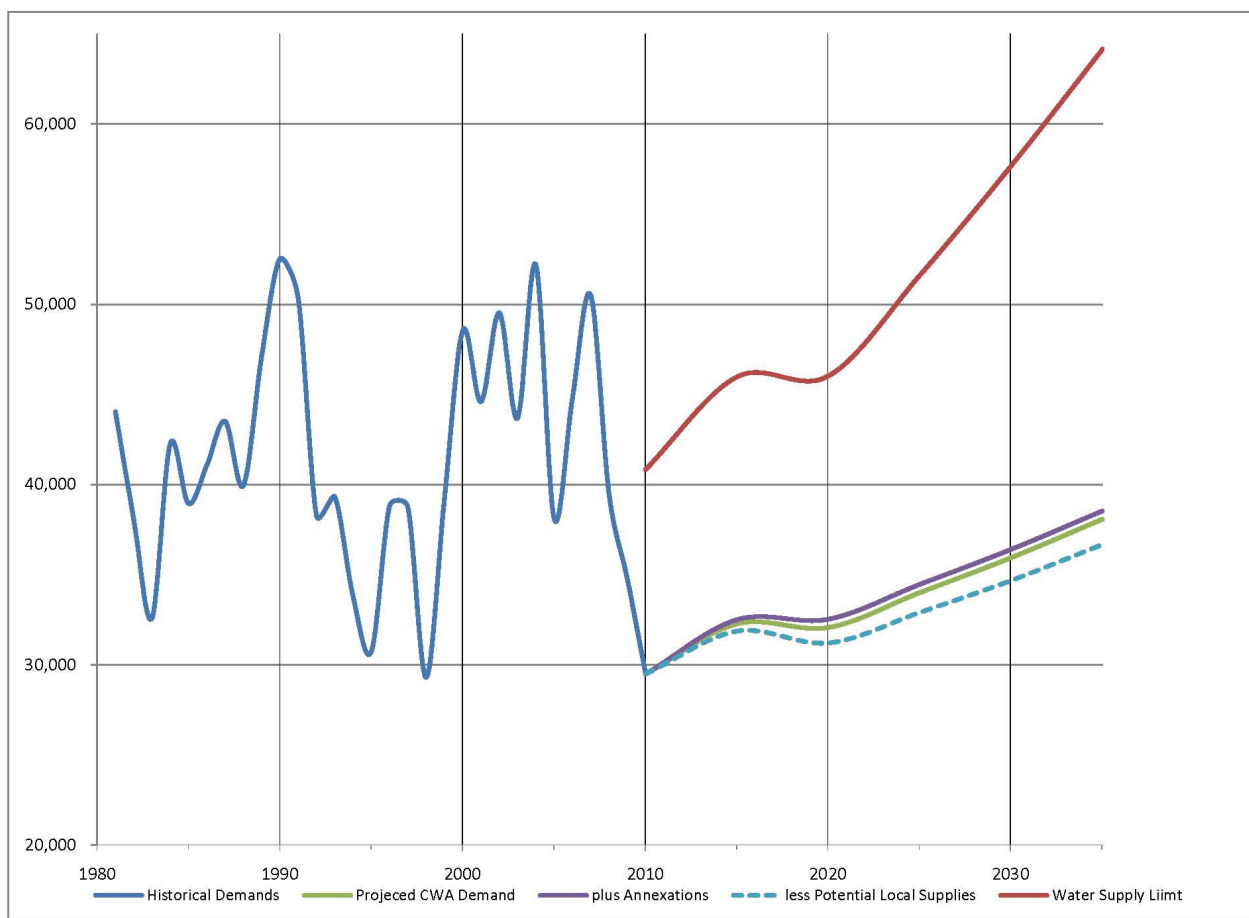


Figure 3-1. Historical and Projected Water Demand, Including Annexations, Potential Local Supplies, and Water Supply Limit (based on 20x2020 calculations)

Source: VCMWD

3.4.2.1 Domestic Water Use

Studies show that several factors serve to either increase or decrease the gross per capita use rate (total water use divided by total population). Major factors that increase the gross per capita use rates include: increased household size, increased household income, geographic growth differentials (i.e., hotter inland areas versus cooler coastal areas), and an increasing regional per capita product. Factors that decrease the per capita use include: an increasing share of multifamily housing units, recent California Plumbing Codes revisions, educational programs, conservation programs, and changes in retail pricing. Significant increases in water rates can also result in decreased water use demand.

On a regional level, it is anticipated that the reduction factors will offset most of the increasing factors.

3.4.2.2 Agricultural Water Use

Coupled with land values and the total costs for crop production, the economics and availability of water supplies will certainly impact future agricultural water use. The combined water rate discount for agricultural water users from MWD's Interim Agricultural Water Rates Program and SDCWA is currently \$238 per ac-ft. This discount saved District customers \$2 million in FY 2009-2010, however, in return

for the discount, agricultural users are subject to delivery interruptions of up to 30 percent prior to any mandatory delivery reductions to municipal and industrial users. MWD has been phasing out the IAWP since October 2008. It will be completely phased out by December 31, 2012.

3.4.3 Normal Year Water Demand Projections for the 2010 UWMP Update

The District's normal year water demand projections are in the low range of demands reflected in the District's 2002 Water Master Plan as well as the SDCWA's 2002 Water Master Plan. In fact, in the later years of the current planning horizon, demand levels are projected to decline. This dramatic change in demand forecasts from the 2005 UWMP is tied to the revised SANDAG population growth projections reflected in the 2010 Urban Water Management Plan Update for the SDCWA. The two factors at work here are the levels of population growth assigned by SANDAG to the unincorporated communities in San Diego County, and an assumed rate of agricultural to residential land conversion to accommodate this projected growth.

Table 3-12 provides the water sold to other agencies. The District does not provide water to other agencies; therefore, this table is not applicable.

Table 3-12. Sales to Other Water Agencies, ac-ft/yr (DWR Table 9)							
Water Distributed	2005	2010	2015	2020	2025	2030	2035
Not Applicable	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0

Unaccounted-for water use is unmetered water use such as for fire protection and training, system and street flushing, sewer cleaning, construction, system leaks, unauthorized connections, reservoir cleaning, and other municipal uses. Unaccounted-for water can also result from meter inaccuracies. Because the District is completely metered, data is available for determining the percent of UAW, as shown in Table 3-13. The following actions are implemented to help account for unmetered uses:

- Unmetered uses are monitored monthly.
- Facilities are inspected daily, including reservoirs, pumping stations, and valve vaults.
- All easements and pipeline alignments are visually inspected annually.
- Reports are completed for all leaks.
- Responsible parties are billed for any water loss (damaged fire hydrants, air vacs, blowoffs, etc.).
- A leak detection program is in place, utilizing sonar equipment and specially trained personnel.
- District personnel respond to and promptly investigate all reported potential leaks.
- The District monitors and pursues prosecution for water theft.

Table 3-13. Additional Water Uses and Losses, ac-ft/yr (DWR Table 10)

Water Use	2005	2010	2015	2020	2025	2030	2035
Saline barriers	0	0	0	0	0	0	0
Groundwater recharge	0	0	0	0	0	0	0
Conjunctive use	0	0	0	0	0	0	0
Raw water (agricultural)	0	0	0	0	0	0	0
Recycled water	0	0	0	0	0	0	0
System Losses / Unaccounted for Water	2,215	1,805	955	827	787	745	701
Proposed Meadowood Annexation	--	--	230	460	460	460	460
Other (define) ¹	(200)	(120)	--	--	--	--	--
Total	2,015	1,685	1,185	1,287	1,247	1,205	1,161

¹Demand adjustment due to changes in storage and meter read dates

The proposed Meadowood annexation project encompasses a total of 389.5 acres located on the north side of State Highway 76, just east of Interstate 15. The project will consist of single-family and multi-family housing along with a park, elementary school, common area landscaping and agricultural open space containing approximately 49 acres of retained groves.

Table 3-14 provides a summary of the total water use for the District including retail water deliveries, sales to other water agencies, and additional water uses and losses.

Table 3-14. Total Water Use, ac-ft/yr (DWR Table 11)

Water Distributed	2005	2010	2015	2020	2025	2030	2035
Total water deliveries (from DWR Tables 3 to 7)	36,090	27,837	31,359	31,286	33,259	35,243	37,423
Sales to other water agencies (from DWR Table 9)	0	0	0	0	0	0	0
Additional water uses and losses (from DWR Table 10)	2,015	1,685	1,185	1,287	1,247	1,205	1,161
Total Water Use	38,105	29,522	32,544	32,573	34,506	36,448	38,584

3.4.4 Water Demands for Lower Income Households

#34. The water use projections required by Section 10631 shall include projected water use for single-family and multifamily residential housing needed for lower income households, as defined in Section 50079.5 of the Health and Safety Code, as identified in the housing element of any city, county, or city and county in the service area of the supplier (10631.1(a)).

In accordance with SB 1087, VCMWD adopted Resolution No. 2006-35, which grants water and sewer service priority within its jurisdictional boundaries to any proposed developments that include housing units for lower income households. An estimate of the projected single-family and multi-family water low-income demands is provided in Table 3-15. The single and multi-family residential low-income projections are based on the water deliveries presented earlier in Tables 3-9 through 3-11. The estimate of lower income housing single family and multi-family water demands is based on the forecasted total number of households for Valley Center Subregional Area (SANDAG) that have a projected income that is

less than 80 percent of the median income. The median household income of the District is \$81,096 (CAFR 2010).

Table 3-15. Low-Income Projected Water Demands, ac-ft (DWR Table 8)					
Low Income Water Demands	2015	2020	2025	2030	2035
Single-family residential	3,493	3,866	4,399	4,257	5,014
Multi-family residential	240	308	389	413	503
TOTAL	3,732	4,174	4,787	4,669	5,518

Section 4

Water Supplies

#13. Identify and quantify the existing and planned sources of water available for 2015, 2020, 2025, and 2030.

This chapter discusses the District's current sources of water supply, the quality of the supply, new supply opportunities, and exchanges and transfers of water.

4.1 Wholesale Water

4.1.1 MWD of Southern California

The MWD was created in 1928 following the passage of the MWD Water District Act by the California Legislature to provide supplemental water for cities and communities on the south coastal plain of California. The MWD has 23 member agencies including the SDCWA, and covers an area which includes all, or portions, of Ventura, Los Angeles, Orange, Riverside, San Bernardino, and San Diego Counties.

MWD serves as a water wholesaler, and provides water to its member agencies from both the Colorado River and the State Water Project. MWD's water supplies and management programs are discussed at length in the agency's 2010 Regional Urban Water Management Plan.

The MWD water is purchased by the SDCWA for resale to its 23 member agencies. The SDCWA organization is described below.

4.1.2 San Diego County Water Authority

The SDCWA was organized on June 9, 1944 under the County Water Authority Act for the express purpose of importing Colorado River Water into San Diego County. The SDCWA annexed to MWD in 1946 and is now represented on the MWD Board by six directors, as its largest customer.

The District is one of 23 member agencies of the SDCWA. Member agency status entitles the District to directly purchase water from SDCWA on a wholesale basis. The District also looks to the SDCWA to insure, to the best of its ability, that adequate amounts of water will be available to satisfy future water requirements.

Water imported from MWD is sold wholesale to SDCWA's member agencies. Each agency is autonomous and its city council or board of directors sets local policies and water pricing structures, and appoints representatives (based on assessed valuation) to the SDCWA's Board of Directors. The District currently has one representative on the SDCWA Board.

SDCWA's water supplies and management programs are discussed at length in the SDCWA's 2010 Urban Water Management Plan.

Table 4-1 presents the historic and projected water limits, including the amount of water VCMWD imports from the SDCWA and other potential water limits. Table 4-2 shows annual ac-ft of water purchased over the past twenty years.

Table 4-1. Historic and Projected Water Supplies the District (DWR Table 16)

Water Supply Sources		2010	2015	2020	2025	2030	2035 Optional
Purchased from wholesaler:	Wholesaler supplied volume (yes/no)						
SDCWA	Yes	29,478	32,497	32,526	34,459	36,401	38,537
Supplier produced groundwater ²		0	0	0	0	0	0
Supplier produced surface diversions		0	0	0	0	0	0
Transfers in		0	0	0	0	0	0
Exchanges In		0	0	0	0	0	0
Recycled Water (Existing)		44	47	47	47	47	47
Other		0	0	0	0	0	0
Total		29,522	32,544	32,573	34,506	36,448	38,584

Units of Measure: ac-ft/yr

Source: SDCWA and VCMWD projections

¹ 20 X 2020 demand limits

² Groundwater will not be produced from a basin that is adjudicated or in overdraft (see Section 4.3)

Table 4-2. Acre-Feet of Water Purchased by the District, 1990-2010

Fiscal Year Ending	acre-feet	mgd
1990	52,535	46.9
1991	50,354	45.0
1992	38,282	34.2
1993	39,324	35.1
1994	33,799	30.2
1995	30,724	27.4
1996	38,822	34.7
1997	38,744	34.6
1998	29,301	26.2
1999	39,195	35.0
2000	48,550	43.3
2001	44,598	39.8
2002	49,524	44.2
2003	43,675	39.0
2004	52,182	46.6
2005	38,105	34.0
2006	44,767	40.0
2007	50,511	45.1
2008	39,500	35.3
2009	34,781	31.0
2010	29,522	26.4

Source: VCMWD Comprehensive Annual Financial Report 2010 and 2001

Upon its formation in 1954, the District joined the SDCWA and MWD to acquire the right to purchase and distribute imported water throughout its service area. The SDCWA has 23 member agencies, and is the regional wholesaler of imported waters.

This imported water, which is delivered into the SDCWA's First and Second San Diego Aqueducts from MWD facilities located just south of the San Diego County/Riverside County line, consists of a combination of Colorado River Water and State Water Project Water. From 1991-1994, however, almost 100 percent of the water originated in the Colorado River. From 1994-1995 on, the water supply originated from both the State Water Project and the Colorado River.

4.2 Transfers and Exchanges

#24. Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis (10631(d)).

The District does not have any planned or potential future water exchanges to receive or deliver water supplies on a short-term or long-term basis, as shown in Table 4-3.

Table 4-3. Transfer and Exchange Opportunities (DWR Table 20)

Transfer Agency	Transfer or Exchange	Short Term or Long Term	Proposed Volume
None	0	0	0
Total	0	0	0

The District relies almost entirely on water purchased from the SDCWA, and does not participate individually in any water transfer or exchange programs at this time. The regional exchanges and transfers being implemented and pursued by the SDCWA are briefly described herein and are described in greater detail in the SDCWA's 2010 UWMP.

Regional exchanges and transfers being pursued by the MWD are documented in the MWD's 2010 Regional Urban Water Management Plan (RUWMP).

4.3 Groundwater

#14.(Is) groundwater...identified as an existing or planned source of water available to the supplier (10631(b)).

The District does not utilize groundwater as an existing source of water due to limited groundwater availability based on the size of the San Luis Rey Valley groundwater basin per California Department of Water Resources Bulletin 118.

Since the District relies almost entirely on imported water from SDCWA, focus on diversifying its supply is eminent. Currently, there are two local water supply projects in the works to provide groundwater supplies to the District.

- The Paradise Reservoir Wells Project—This is a Capital Improvements Project (CIP) that is proposed to blend well water with potable water at the reservoir. Analysis and testing of an abandoned well is required for possible inclusion in the District's potable water system. Once analysis is completed, additional work may include equipping the well and constructing treatment facilities and a connection to the potable system at the Paradise Mountain Reservoir. Forecasted yield could be as much as 40 ac-ft/yr.

- **Lake Turner Non-Potable Water Project**—This CIP would construct a non-potable water distribution system that uses groundwater and stormwater runoff to provide an alternative local source of water for agriculture irrigation in lieu of imported water. Improvements would consist of groundwater well rehabilitation, pump station upgrades and construction of a forebay reservoir and 18,000 linear feet of 8-inch water main. Forecasted yield could be as much as 240 ac-ft/yr.
- **Beck Wells Project**—This CIP requires analysis and testing of 17 abandoned wells for possible inclusion in the District's potable water system. Once analysis is complete, additional work may involve equipping the wells, constructing treatment facilities and connecting to the Paradise Reservoir Zone. Forecasted yield could be as much as 200 ac-ft/yr.
- **Cool Valley Reservoir Wells Project**—This CIP requires analysis and testing of an abandoned well for possible inclusion in the District's potable water system. Once analysis is complete, additional work may involve equipping the wells, constructing treatment facilities and connecting to the Paradise Reservoir Zone. Forecasted yield could be as much as 80 ac-ft/yr.

While the District may pursue studies to investigate new groundwater sources in the future, no groundwater management plans have been prepared or adopted at this point in time. Based on the DWR Bulletin 118, the District will not be using water from a basin that is adjudicated or in overdraft (Tables 4-4 and 4-5).

Table 4-4. Total Volume of Groundwater Pumped (ac-ft/yr) (DWR Table 18)

Basin name(s)	Metered or Unmetered ¹	2006	2007	2008	2009	2010
No Basin Pumped	NA	NA	NA	NA	NA	NA
Total groundwater pumped		--	--	--	--	--
Groundwater as a percent of total water supply		--	--	--	--	--

Table 4-5. Groundwater – Volume Projected to be Pumped (ac-ft/yr) (DWR Table 19)

Basin Name	2015	2020	2025	2030	2035 (Optional)
None	0	0	0	0	0
Percent of total water supply	0	0	0	0	0

4.4 Desalination

#31. Describe the opportunities for development of desalinated water, including, but not limited to, ocean water, brackish water, and groundwater, as a long-term supply (10631(i)).

Poseidon Resources, Inc. is developing the Carlsbad Desalination Project, which will be a 50 million gallon a day (mgd) seawater desalination plant. Upon completion in 2013, Carlsbad Desalination Project will supply the San Diego region with approximately 10 percent of its drinking water needs.

Carlsbad Municipal Water District first negotiated a contract with Poseidon Resources to purchase water from the project. This water purchase agreement cleared the way for the public-private partnership between the City of Carlsbad and Poseidon Resources. Currently, Poseidon Resources is in discussions

with the SDCWA on a possible new water purchase agreement. This agreement will allow SDCWA to buy all the water from Poseidon and deliver it to the water agencies, instead of the water agencies purchasing the water directly from Poseidon Resources (City of Carlsbad 2011).

4.5 Water Quality

#52. The plan shall include information, to the extent practicable, relating to the quality of existing sources of water available to the supplier over the same five-year increments as described in subdivision (a) of Section 10631, and the manner in which water quality affects water management strategies and supply reliability (10634).

This section describes the water quality of the existing water supply sources within the District and the manner in which water quality affects water management strategies. In addition, this section describes the manner in which water quality affects the water supply.

The District's 2010 Water Quality Report is included as Appendix C of this document.

The quality of existing surface water and groundwater supply sources over the next 20 years is expected to be adequate. Purchased water will continue to be treated to drinking water standards, and no water quality deficiencies are foreseen to occur in the next 20 years. There are no viable groundwater supplies in the District.

Water quality affects the District's water management strategies through the District's efforts to be in compliance with Federal and State regulations. These regulations require rigorous water quality testing, source assessments, and treatment compliance. No other special water management strategies due to water quality effects are necessary.

A summary of the current and projected water supply changes due to water quality is provided in Table 4-6.

Table 4-6. Water Quality – Current and Projected Water Quality Supply Impacts, percent (DWR Table 30)						
Water Supply Sources	Description of Condition	2010	2015	2020	2025	2030
Purchased	No Impact	0	0	0	0	0
Groundwater	No Impact	N/A	N/A	N/A	N/A	N/A
Recycled water	No Impact	0	0	0	0	0
Desalination water	No Impact	0	0	0	0	0

The levels of salinity can vary greatly between MWD's two sources of imported water. Salinity control has long been an issue on the Colorado River, as supplies from the Colorado River Aqueduct (CRA) can reach 700 milligrams per liter (mg/l) total dissolved solids (TDS). By comparison, the State Water Project provides an average 250 mg/l from the East Branch and 325 mg/l from the West Branch (San Diego County is served from the East Branch of the State Water Project (SWP)). High salinity levels can damage water delivery systems and home appliances and also cause problems for water recycling projects in the SDCWA's service area, especially for marketing recycled water to agricultural users growing salt-sensitive crops. (Refer to the SDCWA's 2010 UWMP, Section 7, for details on salinity impacts to water quality, groundwater, and water recycling.)

Water lower in TDS is required to blend with the higher TDS Colorado River water that will be supplied by Imperial Irrigation District in order to achieve a lower overall TDS in the SDCWA's supplies.

SWP water contains relatively high levels of bromide and total organic carbon, two elements that are of particular concern to drinking water agencies. Bromide and total organic carbon combine with chemicals used in the water treatment process to form disinfection byproducts that are regulated under the federal Safe Drinking Water Act (SDWA). Wastewater discharges from cities and towns surrounding the Delta also add salts and pathogens to Delta water, and they influence its suitability for drinking and recycling (SDCWA UWMP 2010).

Recent actions to protect Delta fisheries have forced the SWP to shift diversions from spring to fall, when salinity and bromide levels are higher. Closure of the Delta Cross-Channel gates to protect migrating fish has also degraded SWP water quality by reducing the flow of higher quality Sacramento River water to the SWP pumps at critical times (SDCWA UWMP 2010).

Additional transfer supplies for the San Diego region would not only help meet demands but could also provide lower salinity water for purposes of blending with IID transfer water.

4.6 Current and Projected Normal Year Water Supplies

Table 4-7 shows the upper limit of the District's projected future imported water supplies (based on the District's 20 x 2020 Demand Limits). In year 2015, imported deliveries will of necessity still be met by SDCWA. The MWD's The Integrated Resources Plan (IRP) identifies a mix of resources (imported and local) that when implemented will provide 100 percent reliability for full-service demands through the attainment of regional targets set for conservation, local supplies, SWP supplies, Colorado River supplies, groundwater banking, and water transfers. The 2003 update to the IRP now includes a planning buffer supply to mitigate against the risks associated with implementation of local and imported supply programs. The planning buffer identifies an additional increment of water that could potentially be developed if other supplies are not implemented as planned. As part of implementation of the planning buffer, MWD should evaluate supply development annually to ensure that the region is not over developing supplies. If managed properly, the planning buffer will help ensure that the southern California region, including San Diego County, will have adequate supplies to meet future demands. Specific information on MWD's IRP and Water Surplus and Drought Management Plan (WSDM Plan) is contained in their 2010 Plan RUWMP.

Table 4-7. Wholesale Supplies – Existing and Planned sources of Water (DWR Table 17), ac-ft/yr

Wholesale sources	Contracted Volume	2015	2020	2025	2030	2035 - opt
SDCWA	N/A ⁴	45,968 ⁵	46,020	51,603	57,682	64,157
Woods Valley Ranch WRF	N/A	47	47	47	47	47

¹Water volumes presented here should be accounted for in Table 16.

²If the water supplier is a wholesaler, indicate all customers (excluding individual retail customers) to which water is sold. If the water supplier is a retailer, indicate each wholesale supplier, if more than one.

³Indicate the full amount of water

⁴SDCWA does not define contract amounts

⁵Supply values based on the District's 20 x 2020 Demand Limits

4.7 Water Supply Reliability

#23. For any water source that may not be available at a consistent level of use, given specific legal, environmental, water quality or climatic factors, describe plans to supplement or replace that source

with alternative sources or water demand management measures, to the extent practicable 10631(c)(2).

#22. Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage, to the extent practicable, and provide data for each of the following: (A) an average water year, (B) a single dry water year, (C) multiple dry water years (10631(c)(1)).

#5. Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage, to the extent practicable, and provide data for each of the following: (A) an average water year, (B) a single dry water year, (C) multiple dry water years 10631(c)(1).

#36. An estimate of the minimum water supply available during each of the next three water years based on the driest three-year historic sequence for the agency's water supply (10632(b)).

This section describes the reliability of the water supply and vulnerability to seasonal or climatic shortage. The basis of the water year data to develop the water supply reliability is provided in Table 4-8. The definitions of the three water supply scenarios as described by DWR (DWR, 2010) are provided below.

1. Average year is a year in the historical sequence that most closely represents median runoff levels and patterns. Average is defined as the median runoff over the previous 30 years or more. This median is recalculated every ten years.
2. Single-dry year is generally considered to be the lowest annual runoff for a watershed since the water year beginning in 1903.
3. Multiple-dry year period is generally considered to be the lowest average runoff for a consecutive multiple year period (three years or more) for a watershed since 1903.

Table 4-8. Basis of Water Year Data (DWR Table 27)	
Water Year Type	Year(s) Data is Based Upon / Precipitation
Average Water Year	1981 - 12.68" 2003 - 13.00"
Single Dry Water Year	1989 -- 4.77"
Multiple Dry Water Years	2000 -- 4.81" 2002 -- 11.68" 2002 -- 5.83" Avg. -- 7.44"

A water supply reliability comparison is made in Table 4-9 for the year 2015, considering three water supply scenarios: average/normal water year; single dry water year; and multiple dry water years. Based on the SDCWA 2010 UWMP, the supply to member agencies will increase during dry years to meet the increase in demand.

Table 4-9. Water Supply Reliability (DWR Table 28), 2015, ac-ft/yr						
Water Supply Sources	Normal Water Year	Single Dry Water Year	Multiple Dry Water Years			
			Year 1	Year 2	Year 3	Year 4
Purchased Water	46,481 ¹	46,481	46,481	46,481	46,481	46,481
Total	46,481	46,481	46,481	46,481	46,481	46,481
Percent of Average/Normal Year Supply	100%	100%	100%	100%	100%	100%

¹Supply values based on the District's SBX7-7 20 x 2020 Demand Target for 2015

A water supply reliability comparison for the SCDWA supply is made in Table 4-10, considering three water supply scenarios: normal water year; single-dry water year; and multiple-dry water years. The District also looks to the SDCWA to insure, to the best of its ability, that adequate amounts of water will be available to satisfy future water requirements. During the normal water year 2003-2004, the District purchased 52,182 ac-ft/yr from SDCWA. The normal water year presented in Table 4-10 is based on the District's projected demand for 2015. Based on The 2010 UWMP, the SDCWA projects that it will be able to meet the wholesale demands of its water districts and agencies during all three types of water years – normal, single dry, and multiple dry years (Table 4-10).

Table 4-10. Wholesaler Supply Reliability – ac-ft/yr (DWR Table 31)					
Wholesaler	Normal Water Year	Multiple Dry Water Years			
		Year 1	Year 2	Year 3	Year 4
SDCWA	46,481	46,481	46,481	46,481	46,481
Percent of Normal	100%	100%	100%	100%	100%

The SDCWA coordinated with its member agencies and MWD during preparation of the 2010 Plan on the future demands and supplies projected for the region. The Act requires that, for any water source that may not be available at a consistent level of use, given specific legal, environmental, water quality, or climatic factors, that the agency describe, to the extent practicable, plans to replace that source with alternative sources or water demand management measures. As stated throughout the 2010 Plan, the SDCWA and its member agencies are planning to develop a diverse supply of resources. The unavailability of any one supply source will be buffered because of the diversity of the supplies: the region is not reliant on a single source. To replace or supplement an existing supply, the SDCWA could take steps to increase development of transfers or seawater desalination. Member agencies could also further maximize development of recycled water and groundwater. With a successful conservation program already in place, the SDCWA and its member agencies could effectively implement extraordinary conservation measures to assist in ensuring reliability. Another element of reliability is MWD's IRP planning buffer, which identifies an additional increment of water that could be potentially developed if other supplies are not implemented as planned. A combination of these resources would be necessary to ensure a reliable supply (SDCWA UWMP 2010). There is no planned inconsistency of supply. Factors resulting in inconsistency of the Agency's supply are included in Table 4-11.

Table 4-11. Factors Resulting in Inconsistency of Wholesaler's Supply (DWR Table 29)								
Water supply sources ¹	Specific source name, if any	Limitation quantification	Legal	Environmental	Water quality	Climatic	Earthquake	Additional information
SDCWA				X		X	X	X

4.8 Water Supply Projects

#30. (Describe) all water supply projects and water supply programs that may be undertaken by the urban water supplier to meet the total projected water use as established pursuant to subdivision (a) of Section 10635. The urban water supplier shall include a detailed description of expected future projects and programs, other than the demand management programs identified pursuant to paragraph (1) of subdivision (f), that the urban water supplier may implement to increase the amount of water supply

available to the urban water supplier in average, single-dry, and multiple dry years. The description shall identify specific projects and include a description of the increase in water supply that is expected to be available from each project. The description shall include an estimate with regard to the implementation timeline for each project or program (10631(h)).

The District has several planned future water supply projects or water supply programs pertaining to water reclamation and local groundwater development. Currently, the District is preparing an integrated water resources master plan that will provide an overview of local water supply projects to be considered for future development. All water generated from the proposed Local Water Supply Projects will offset imported water demand.

Although a final determination of overall yield has not been performed, the total yield of the current proposed projects is expected to be just over 1,700 acre-feet per year (Table 4-12). Annual water reclamation yields are based on ultimate build-out of each reclamation plant's service zone and are subject to change based on real estate market conditions, final development design and County planning ordinances. Estimated groundwater yields are based on historic groundwater testing and will be adjusted to reflect new pump test results and final well development. Other constraints to project implantation include overall project feasibility and funding availability.

Table 4-12. Future Water Supply Projects (DWR Table 26)

Project Name	Projected Start Date	Projected Completion Date	Potential Project Constraints	Normal Year Supply, ac-ft/yr	Single-Dry Year Supply, ac-ft/yr	Multiple Dry Year Supply, ac-ft/yr		
						First Year	Second Year	Third Year
Lower Moosa Canyon WRF - AWT Upgrade	2013	NA	NA	700	700	700	700	700
Welk WRF	2018	2020	--	140	140	140	140	140
Woods Valley Ranch WRF - Phase II Expansion	2012	2014	--	59	59	59	59	59
Woods Valley Ranch WRF - Phase III Expansion	2018	2020	--	50	50	50	50	50
North Village WRF	2013	2015	--	151	151	151	151	151
Lilac Ranch WRF	2017	2019	--	59	59	59	59	59
Meadowood WRF	2014	2016	--	143	143	143	143	143
Lake Turner Non-Potable Distribution System	2018	2020	--	240	240	240	180	120
Beck/Paradise Mountain Wells	2013	2015	--	240	240	240	180	120
Cool Valley Reservoir Wells	2018	2020	--	80	80	80	60	40
Total				1,862	1,862	1,862	1,722	1,582

Projects under consideration for future development are as follows:

4.8.1 Water Reclamation

Woods Valley Ranch Water Reclamation Facility Expansion (WVRWF Expansion)

- This project will expand the existing 70,000 GPD tertiary treatment facility to 157,500 GPD. The capacity increase will allow the District to serve an additional 350 homes, which are both approved

and planned within the Valley Center's "South Village" area as defined by San Diego County planning documents and produce an estimated 59 ac-ft/yr of recycled water. Additionally, a wastewater collection system designed to serve existing developed properties and future development is a part of the project. The recycled water from the expansion will be utilized to irrigate the Woods Valley Ranch Golf Course, landscaped parkways and dedicated open space within the planned communities.

North Village Water Reclamation facility (NVWRF)

- The NVWRF will serve Valley Center's "North Village" planning area as defined by San Diego County planning documents. This area includes existing and proposed commercial and residential development as well as existing public facilities including the Valley Center-Pauma Unified School District, County of San Diego Department of Public Works, U.S. Post Office and the VCMWD operational and administrative facilities. Tertiary treated effluent will be utilized within the service zone for agriculture irrigation, parkway landscaping and dedicated open space. Although wastewater flow rates are yet to be determined pending final development approval from the County of San Diego Department of Planning and Land Use, it is estimated that approximately 151 ac-ft/yr of recycled water will ultimately be available for reuse.

Welk's Water Reclamation Skimming Plan Project (Welk's Skimming Plant)

- The proposed Welk's Skimming Plant project consists of a small scale package wastewater treatment plant with a capacity of 125,000 GPD which will allow the District to intercept current flows from the existing Meadows and Champagne Village residential communities and the Welk's commercial recreational hotel and time share developments prior to the Lower Moosa Wastewater Reclamation facility. The tertiary treated water would be used on the existing Welk's golf course, resort landscape areas, and parkway landscaping. During low irrigation demand periods, the treated effluent will be stored in the groundwater basin and retrieved via existing groundwater wells during high demand periods. It is estimated that approximately 140 ac-ft/yr of potable water use could be offset due to this project, thus providing another means to provide a more reliable source of non-potable water within the District.

Lower Moosa Canyon Water Reclamation Facility (LMCWRF) Treatment Process Upgrade and Reclamation System

- The LMCWRF Treatment Process Upgrade and Reclamation System project (Project) is a multi-phased project that will expand and upgrade the LMCWRF's current wastewater treatment process and construct a recycled water distribution system for an ultimate capacity of 0.75 mgd. The proposed facilities will produce and distribute approximately 700 ac-ft/yr of tertiary-treated effluent within the proposed reuse area including agriculture, parkway landscaping, dedicated open space, and golf courses. This project will offset the demand for imported water with a more stable supply of highly treated effluent.

4.8.2 Groundwater Development

Paradise Mountain Wells

- The Paradise Mountain Groundwater Development project consists of developing several privately owned and abandoned agricultural wells for possible use to augment current imported potable water within the Paradise Mountain service zone. The well owners would either develop the wells to municipal standards and then sell the system to the District, or pay a wheeling charge to the District to offset their potable water use in other parts of the District. The proposed wells would extract the developed groundwater, which would be stored in the Paradise Mountain Reservoir for use within this service zone. The proposed facilities will produce and distribute approximately 240 ac-ft/yr.

Cool Valley Wells

- These wells are located in the west central portion of the District in the Cool Valley/1840 service zone. Located within both District and privately owned property, the current owner has expressed an interest in having the District develop several of the wells to municipal standards and then purchasing the water system.
- Developed groundwater from this system would be pumped into the Cool Valley Reservoir for distribution within the service zone or pumped to a higher service zone for storage and distribution. The proposed facilities will produce and distribute approximately 80 ac-ft/yr of potable water.

Lake Turner Wells

- The Lake Turner Wells consist of two abandoned wells located within District owned property in the south central portion of the District, adjacent to Lake Turner. Historical water quality analyses indicate the need for intense treatment for potable use.
- This project will replace current imported potable supplies used for agriculture with locally generated non-potable water thereby freeing up potable water for M&I use. Further, the non-potable water would increase agricultural water stability within the local area.
- Well development will combine water from the existing non-potable wells with a limited amount of surface water from Lake Turner to produce an anticipated yield of 240 ac-ft/yr. Water would be delivered to nearby agricultural customers via a new non-potable distribution system, which would be constructed as part of the project.

SDCWA completed a Regional Water Facilities Master Plan (RWFMP) process in 2004. The RWFMP defines the regional facilities needed to meet water demands within the SDCWA's service area through the year 2030. The SDCWA examined the changing water supply and demand forecast patterns using a probabilistic approach to facilities planning. A computer model analyzed various facility options under a range of supply and demand scenarios. This modeling resulted in an assessment of the reliability of the system measured in terms of the probability, frequency, and magnitude of water shortages for each facility option.

Section 5

Recycled Water

Water recycling, defined as the treatment and disinfection of municipal wastewater to provide a water supply suitable for non-potable reuse, is an important component of southern California's water resources. Non-potable reuse is the term applied to recycled water used for non-drinking water purposes such as filling lakes, ponds, and ornamental fountains; irrigating parks, campgrounds, golf courses, freeway medians, community green belts, school athletic fields, crops, and nursery stock; controlling dust at construction sites; and recharging groundwater basins.

Recycled water can also be used in certain industrial processes and for flushing toilets and urinals in nonresidential buildings. However, current regulations allow only new buildings to be dual-plumbed for this specific use. Additional uses for recycled water are being identified and approved as local agencies, regulators, and customers become comfortable with its use.

The purpose of this chapter is to provide information on recycled wastewater and its potential for use as a water resource in the District. The elements of the chapter are (1) the quantity of wastewater generated in the service area; (2) description of the collection, treatment, and disposal/reuse of that wastewater; (3) the current plans for water recycling; and (4) the potential for water recycling in the service area.

#44. Provide, to the extent available, information on recycled water and its potential for use as a water source in the service area of the urban water supplier. The preparation of this plan shall be coordinated with local water, wastewater, groundwater, and planning agencies that operate within the supplier's service area (10633).

5.1 Recycled Water Plan Coordination

The District has reported to SDCWA that the established, confirmed recycled water is about 47acre-feet. Table 5-1 shows the estimated annual yields from VCMWD projects in 5-year increments, based on the implementation schedules provided by the member agencies (presented in Table 1-1) and the likelihood of development.

Table 5-1. Projected Recycled Water Use, Reported to SDCWA (Normal Year – ac-ft/yr)						
2005	2010	2015	2020	2025	2030	2035
3	44	497	598	756	876	996

5.2 Wastewater Quantity, Quality, and Current Uses

#45. (Describe) the wastewater collection and treatment systems in the supplier's service area, including a quantification of the amount of wastewater collected and treated and the methods of wastewater disposal (10633(a)).

#46. (Describe) the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project (10633(b)).

Wastewater collection, transmission, treatment, and effluent disposal or water recycling are provided by the District to approximately 2,722 customers through two sewage treatment facilities: the 440,000 gallon per day Lower Moosa Canyon Water Reclamation Facility at Circle R Drive near Old Highway 395, and the 70,000 gallon per day Woods Valley Ranch Water Reclamation Facility. The Lower Moosa Water Reclamation Facility and the Woods Valley Ranch Water Reclamation Facility are operating well within design capacities and consistently meet discharge standards.

5.2.1 Wastewater Generation

Table 5-2 shows the projected amounts of wastewater projected to be generated and collected in the District from 2010 to 2035. The wastewater collected and treated are projected based on the population values given in Table 3-1 and the equal dwelling unit (EDU) provided by the District's 2010 CAFR.

Table 5-2. Recycled Water – Wastewater Collection and Treatment (ac-ft/yr) (DWR Table 21)							
	2005	2010	2015	2020	2025	2030	2035 (optional)
Wastewater collected and treated in service area (Total)	347	414	583	845	1,048	1,213	1,349
Lower Moosa Canyon WRF	347	370	420	330	460	580	700
Woods Valley Ranch WRF		44	77	128	156	156	156
Welk Skimming Plant				140	140	140	140
North Village WRF			15	45	90	135	151
Lilac Ranch WRF				59	59	59	59
Meadowood WRF			71	143	143	143	143
Volume that meets recycled water standard	0	44	583	845	1,048	1,213	1,349

5.2.2 Lower Moosa Canyon Water Reclamation Facility (WRF)

The Lower Moosa Water Reclamation Facility (Moosa) provides sewer treatment services for 2,452 customers in the District's Interstate 15 corridor area, from the Lawrence Welk development on the southern end, east to Hidden Meadows, and north to Circle R Drive. Ultimate capacity requirements for the service area are projected to be 1.0 mgd or 5,000 Equivalent Dwelling Units (EDUs).

Moosa can currently reliably treat and dispose of 0.44 mgd (504 ac-ft/yr). At this time, disposal effluent is discharged into ponds percolating to the San Luis Rey River basin.

Energy and pumping costs were over \$15,000 less than for 2008-2009 due to aeration system upgrades. The diffuser system is able to distribute air more evenly, using less air and fewer blowers.

Based on an estimated build-out of 50 EDUs per year, current plant capacity should be sufficient for at least 10 years. Recent connection history, however, indicates that the actual build-out rate may be lower, which would not only further delay the need for additional capacity, but would also delay the requirement to initiate direct reclamation of the treated effluent. At this point, it is anticipated that maintenance requirements, rather than expansion needs, will drive the timing of future plant improvements.

It is anticipated that flow rates above 0.440 mgd (493 ac-ft/yr) may require additional treatment to meet effluent disposal requirements. These improvements may involve adding fine-bubble diffusers to the aeration basins, denitrification, and/or improving effluent quality to full California Department of Public

Health (CDPH) Title 22 standards, resulting in an effluent suitable for irrigation of nearby golf courses and agricultural operations.

5.2.3 Skyline Ranch Country Club Reclamation Facility

The Skyline Ranch Country Club Reclamation Facility (Skyline) serves 222 customers and has a design treatment capacity of 0.025 mgd, with actual flows in the range of 0.016 mgd to 0.023 mgd and averaging 0.0203 mgd. Effluent from the Skyline plant is currently disposed of by spray irrigation. Skyline was discussed and included in the 2005 UWMP. However, it is now privately owned.

5.2.4 Wastewater Collection and Treatment

Planned disposal methods and quantities are presented in Table 5-3.

Table 5-3. Recycled Water – Non-Recycled Wastewater Disposal (ac-ft/yr) (DWR Table 22)							
Method of Disposal	Treatment Level	2010	2015	2020	2025	2030	2035
Groundwater Reuse (Moosa Secondary Ponds)	Advanced Secondary	370					
Irrigation							
Landscape	Tertiary	44	94	505	402	411	414
Agriculture	Tertiary	0	489	480	786	802	935
Total		414	583	985	1,188	1,213	1,349

5.3 Current and Future Recycled Water Sources and Uses

#47. (Describe) the recycled water currently being used in the supplier's service area, including, but not limited to, the type, place, and quantity of use (10633(c)).

#48. (Describe and quantify) the potential uses of recycled water, including, but not limited to, agricultural irrigation, landscape irrigation, wildlife habitat enhancement, wetlands, industrial reuse, groundwater recharge, indirect potable reuse, and other appropriate uses, and a determination with regard to the technical and economic feasibility of serving those uses (10633(d)).

#49. (Describe) the projected use of recycled water within the supplier's service area at the end of 5, 10, 15, and 20 years, and a description of the actual use of recycled water in comparison to uses previously projected pursuant to this subdivision (10633(e)).

For some time now, the District has anticipated delivering recycled water from the Moosa plant to the nearby Lawrence Welk and Castle Creek Golf Courses. However, as the two golf courses currently use well water for irrigation, recycled water proceeds to the District would be limited to the cost of delivery. The point at which reclamation at the Moosa facility is expected to be required to meet discharge requirement is at or beyond the planning horizon of this report (year 2025).

In May of 1990, the District adopted Ordinance No. 201, the Mandatory Reclaimed Water Use Ordinance. This ordinance, which was updated in February 1998, requires that wherever there is the potential for current or future reclaimed water use, new developments will be required to install the facilities necessary to facilitate reclaimed water use. Developments in the vicinity of the Moosa plant are required to evaluate the feasibility of utilizing reclaimed water for landscape irrigation. If reuse is determined to be feasible, then these developments are required to install on-site facilities to accept reclaimed water if and when it will be available. The District's service territory cannot be

connected to an ocean outfall. Flow increases at the Lower Moosa Canyon Water Reclamation facility will ultimately exceed the downstream percolation capacity; therefore, creating a need to construct reclamation facilities.

Information on existing and potential recycled water users is summarized in Tables 5-4 and 5-5.

Table 5-4. Existing Recycled Water Uses

Type of Use	Treatment Level	2009 ac-ft
Agriculture	--	0
Landscape ¹	Tertiary	44
Wildlife habitat	--	0
Wetlands	--	0
Industrial	--	0
Groundwater recharge ¹	Advance Secondary	370
Total	--	414

Unit of Measure: Acre Feet per Year

¹ Lower Moosa Canyon

Table 5-5. Recycled Water Potential Use (Acre Feet) (DWR Table 23)

Recycled Water Customer (User Type)	Description	Feasibility ⁴	2015	2020	2025	2030	2035 (optional)
Agricultural ¹		Feasible	489	480	786	802	935
Landscape ²		Feasible	17	237	106	115	118
Commercial irrigation ³			0	0	0	0	0
Golf course irrigation			77	268	296	296	296
Wildlife Habitat			0	0	0	0	0
Wetlands			0	0	0	0	0
Industrial			0	0	0	0	0
Groundwater Reuse ³			0	0	0	0	0
Total Projected Use of Recycled Water:			583	985	1,188	1,213	1,349

Unit of Measure: Acre Feet per Year

¹Includes Live Oak Ranch Development and North Village Water Reclamation Facility

²Includes Woods Valley Ranch Golf Course, Lilac Ranch Development, and Orchard Run Development

³Includes Lower Moosa

⁴ Technical and economic feasibility

Table 5-6 presents the differences between 2005 projections and 2010 actual numbers. Agricultural recycled water use has not begun within the District. Landscaped projections were close to actual numbers, while actual groundwater recharge was higher than projected numbers.

Table 5-6. Recycled Water Uses – 2005 Projection Compared with 2010 Actual (DWR Table 24)

Recycled Water Customer/User Type	2005 Projection for 2010 ³	2010 ⁴
Agricultural ¹	225	0
Landscape ²	295	44
Commercial irrigation ³	--	--
Golf course irrigation	--	--
Wildlife Habitat	--	0
Wetlands	--	0
Industrial	--	0
Groundwater Recharge	650	370
Total	1,170	414

Unit of Measure: Acre Feet per Year

¹ Live Oak Ranch Development

² Includes Woods Valley Ranch Golf Course and Orchard Run Development

³ VCMWD 2005 UWMP Projection

⁴ Actual per VCMWD Recycled Water Project Summaries

At this time there are several proposed developments for construction of wastewater treatment and reclamation facilities that may provide recycled water including the following:

Lower Moosa Canyon WRF Upgrades

- Construction of advanced wastewater treatment facilities at the Lower Moosa Canyon WRF will provide recycled water for agriculture beneficial use. This improvement will divert all but 0.2 mgd from the existing percolation pond. The capacity for this upgrade will be 1.0 mgd (1,120 ac-ft/yr).
- For the Welk WRF, a Membrane Bio-Reactor (MBR) Skimming Plant and golf course irrigation retrofit project will be constructed to intercept wastewater flow for treatment and beneficial use. Recycled water used to supplement ground water currently being supplied to the Welk golf course. The capacity for this upgrade will be 0.125 mgd (140 ac-ft/yr).

Woods Valley Ranch Water Reclamation (WVR WR) Facility (WVR WRF)

- As approved, this 280-unit Specific Plan Area development reclaims 100 percent of the 0.07 mgd (78.4 ac-ft/yr) tertiary treated effluent. The effluent is used to irrigate the 18-hole golf course. Seasonal storage is in on-site storage ponds. Several projects are planned to expand the existing WVRWR Facility to treat the effluent, which will be tertiary treated and used to irrigate landscaping and open space areas on the golf course and future beneficial areas within future developments.
- The District foresees expanding the existing Wood Valley Ranch treatment plant with pending future Expansions such as the Phase II Expansion and the Orchard Run Expansion (0.825 mgd or 92 ac-ft/yr) which will be reclaimed through irrigation to and the Woods Valley Ranch golf course. It is expected that these facilities will be constructed and in operation in the next three to five years, and the WVR WRF will reach full flow potential in 15 to 20 years. In addition to this, all other future wastewater treatment facilities will be inland discharge operations, with 100 percent of effluent being disposed of via some form of direct or indirect recycling.

Lilac Ranch Development

- This tertiary treatment facility will serve a 330 unit residential development. The treated water will be used on agricultural and landscaped areas on the development site. Lilac Ranch is not shown on General Plan Update and it may be feasible to have its own treatment plant.

North Village Water Reclamation Facility

- This tertiary treatment facility will serve up to 1,000 residential and commercial units located within the planning area designated in the North Village area. North Village is shown on the General Plan Update and it is feasible to be served by its own treatment plant.

5.3.1 Meadowood Annexation

The Meadowood development project encompasses a total of 389.5 acres located on the north side of State Highway 76, just east of Interstate 15. The project will consist of single-family and multi-family housing along with a park, elementary school, common area landscaping and agricultural open space containing approximately 49 acres of retained groves.

The project is partially within the San Luis Rey Municipal Water District (SLRMWD) boundary and is not within SDCWA or MWD's service areas. SLRMWD included the Meadowood project in their unannexed area option in their December 2006 Water Master Plan. Thus, the SDCWA included the water demands forecasted for Meadowood in their April 2007 Updated 2005 UWMP as a project to be annexed and served by SLRMWD. At the time, the demand anticipated by the project was 892,500 gallons per day or 1,000 acre-feet per year.

However, SLRMWD does not currently provide imported water or wastewater service and the San Diego County Local Agency Formation Commission (LAFCO) is conducting a Municipal Services Review and Sphere of Influence Update (MSR-SOI) to determine the appropriate provider of water and wastewater service to the area which includes the Meadowood project. In addition to SLRMWD, LAFCO is examining the suitability of Rainbow Municipal Water District (RMWD) and VCMWD to provide water, wastewater, and recycled water service. Ultimately, annexation of the project into the SDCWA and MWD service areas will be required once it is determined which water district will serve the project.

For all three water districts included in the MSR-SOI, the source of water to the project will be imported water via the Water Authority. Water demands for the Meadowood project, totaling 460 acre-feet per year, are based on the Meadowood Water Study (June 29, 2009) by Dexter Wilson Engineering, Inc., plus a 5% allowance for system water loss, and represents the maximum potable water demand for the Meadowood project based on typical demand factors (water use rates) for the proposed land use types. The Meadowood water study sets forth a reduced projected imported potable water demands from the 2005 UWMP values to design refinements to the project and incorporating recycled water and groundwater supplies as supplemental sources. These efforts will be limited by the pace of development, amount of wastewater available for treatment and reclamation, as well as by financial considerations, water quality and other regulatory issues, and by overall public acceptance.

Figure 5-1 shows the locations of the District's existing and planned wastewater facilities.

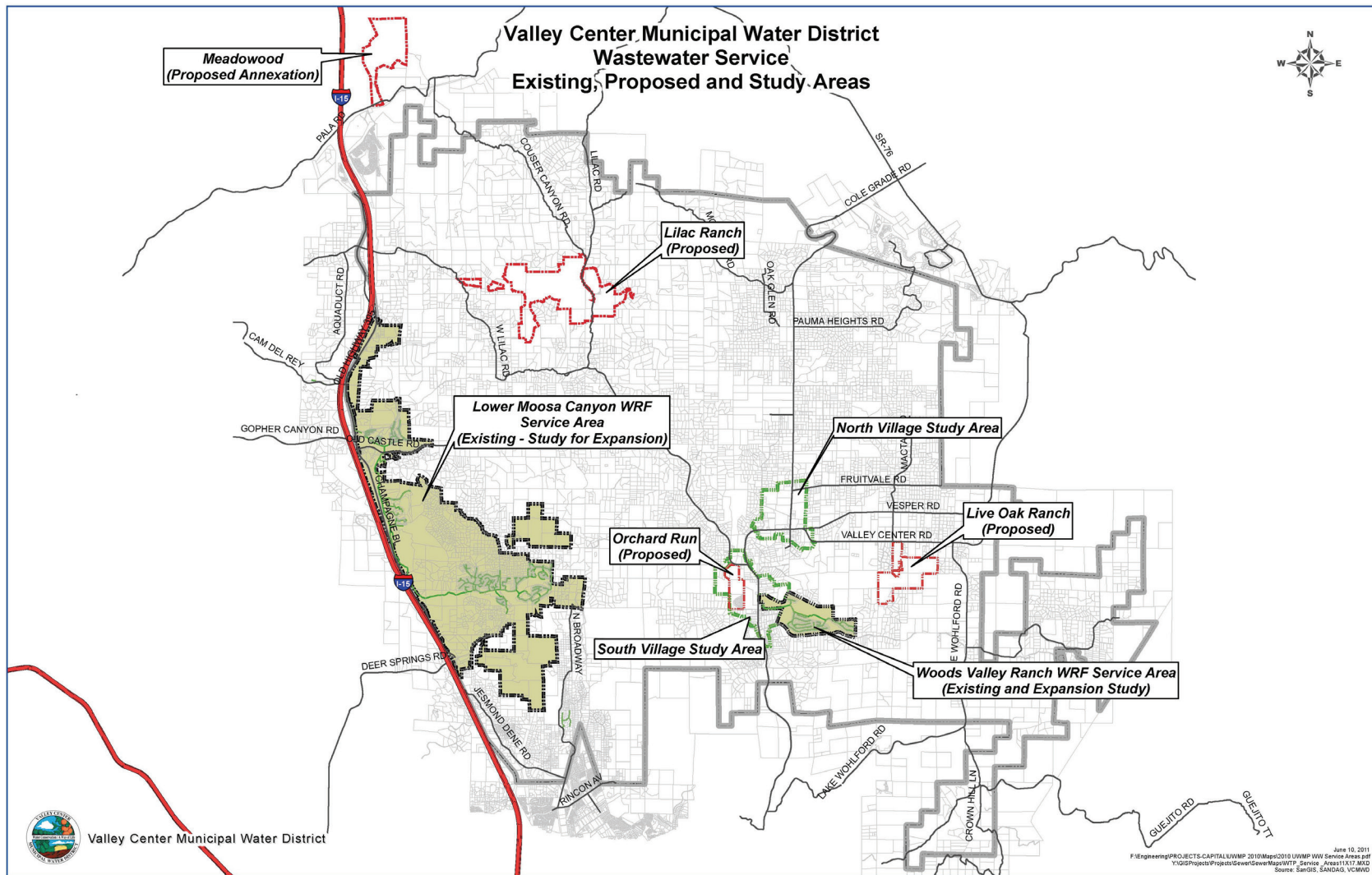


Figure 5-1. Locations of Existing and Planned Wastewater Facilities

With respect to future wastewater flows, all effluent generated by new development will, of necessity, be reclaimed. This is the case for all projects currently in the land-use approval process/development process. Of the three major projects currently in process, all effluent will be treated to tertiary standards and reclaimed on the specific project site. In summary, all future wastewater flows will, by necessity, be 100 percent reclaimed, which obviates the need for optimization or incentive plans.

While the Woods Valley Ranch Project is well underway, expansion of the facility and thus the level of reclamation will depend upon the pace of the development of the Orchard Run Development as well as the affordability of wastewater services for the surrounding, smaller properties and developments. Other critical factors will be securing seasonal storage and disposal sites to serve the full potential for the area.

5.4 Encouraging Use of Recycled Water

The Act requires agencies to describe their actions, including adopted policies and financial incentives, which may be taken to encourage the use of recycled water. This section describes efforts taken by regional agencies (SDCWA, MWD) as well as by the District to encourage and expand the use of recycled water.

5.4.1 Regional Efforts

Table 5-7 summarizes a list of the programs used by the SDCWA's member agencies to assist and encourage development of recycled water uses. Brief descriptions of the major programs are also included. Some of these programs are developed by the water recycling agencies while others, such as the funding programs, are primarily provided by the SDCWA, MWD, and state and federal agencies.

Table 5-7. Programs to Encourage Recycled Water Use
Incentive Programs
Reclaimed Water Development Fund (SDCWA)
Local Resources Program (MWD)
Grants
Title XVI Funding Program (Bureau of Reclamation)
Proposition 13 Grant (State of California)
Low Interest Loans
Financial Assistance Program (SDCWA)
State Revolving Fund (State of California)
Water Reclamation Loan Program (State of California)
Proposition 13 Loan (State of California)
Long-Term Contracts (Price/Reliability)
Rate Discounts
Public Education/Information
Regional Planning
Model Water Reclamation Ordinance
Dual Plumbing Standards
Prohibits Specific Potable Water Uses

Table 5-7. Programs to Encourage Recycled Water Use**Guidance Documents**

Model Rules and Regulations for Recycled Water Service

Construction Specifications for Recycled Water Systems

Recycled Water Retrofit Guidelines

Recycled Water User's Manual

The SDCWA is conducting a Regional Recycled Water System Alternatives Analysis (Regional Recycling Study – Phase II) which will identify opportunities to expand the region's recycled water projects and develop a regional system or systems that could maximize reuse on a regional scale. This study, scheduled for completion at the end of 2005, will identify strategies to overcome identified obstacles to water recycling; develop a marketing plan and regional strategies to market recycled water to target industries and customers; investigate and examine to what extent – and levels – TDS in source water affect the use and application of recycled water for local end-users; research and identify the impediments to the implementation of water repurification projects; and funnel planning grant funding to regional agencies to further expand the use of recycled water.

5.4.2 Funding Programs

The capital intensive cost of constructing recycled water projects has traditionally been a barrier to project implementation. The up-front capital cost for construction of treatment facilities and recycled water distribution systems can be expensive, while full market implementation is usually phased in over a number of years, thus affecting the cash flow in the early project years. This situation is compounded by the seasonal nature of recycled water demands. Recycled water demands tend to peak during the hot summer months and drop off during the winter months when landscape irrigation demands are low. Projects that serve a large portion of irrigation demands, like the majority of the projects in the SDCWA's service area, often utilize only half of their annual production capacity due to these seasonal demand patterns. The costs of these projects tend to be higher than those of projects that serve year-round demands, since the project facilities must be sized to accommodate seasonal peaking. Projects that serve mostly irrigation demands also tend to have less stable revenue bases, since irrigation demands are heavily influenced by hydrologic conditions.

To be financially feasible, a project's benefits must offset or exceed its associated costs. Agencies developing recycled water projects must be able to quantify these benefits in order to determine the economic feasibility of a project. Project benefits can take the form of:

1. Revenues from the sale of recycled water;
2. Increased supply reliability;
3. Increased control over the cost of future water supplies;
4. Avoided water and wastewater treatment, storage, and conveyance costs; and
5. Financial incentives from the SDCWA, MWD, and federal and state agencies.

When the long-term economics are considered along with the increased supply reliability, water recycling can be a viable option.

As diversified funding options can be significant in the success of a water recycling project, the SDCWA has focused on providing and facilitating the acquisition of outside funding for water recycling projects as a very high priority. Several funding programs detailed in this section are critical success factors in the implementation of water recycling in San Diego County.

A number of financial assistance programs are available to San Diego County agencies including: the SDCWA's Financial Assistance Program (FAP) and Reclaimed Water Development Fund (RWDF); MWD's Local Resources Program (LRP); the USBR Title XVI Grant Program; and the SWRCB low-interest loan programs. Together, these programs offer funding assistance for all project phases, from initial planning and design to construction and operation.

5.4.2.1 Financial Assistance Program

As an impetus to begin local projects, SDCWA offers the Financial Assistance Program (FAP) to encourage, through the provision of matching funds, facility planning, feasibility investigations, preliminary engineering studies, environmental impact reports, and research projects related to water recycling and groundwater development. Agencies receiving FAP funds are required to reimburse the SDCWA when implementation of the project results in funding from other sources, such as the LRP or RWDF, or within five years of certification of the project environmental report, whichever occurs first.

5.4.2.2 Reclaimed Water Development Fund

In response to significant up-front costs of many water recycling projects, the RWDF, adopted by the SDCWA's Board of Directors in April 1991, contributes up to \$200/ac-ft of beneficial reuse for recycling projects that demonstrate a financial need. This contribution is to offset costs, especially in the early years of project start-up. In order to qualify, project expenses must exceed project revenues. To date, the SDCWA has entered into RWDF agreements for ten projects with a combined ultimate yield of 32,000 ac-ft/yr.

5.4.2.3 Local Resources Program

MWD also has a program that currently underwrites local projects during the initial years of operation. MWD's local resources program provides subsidies of up to \$250/AF for recycled water and groundwater development projects.

The Reclamation Wastewater and Groundwater Study and Facilities Act - Title XVI Grant Program is a significant source of funding for San Diego area recycling projects. Title XVI of Public Law 102-575, the Reclamation Wastewater and Groundwater Study and Facilities Act, authorizes the federal government to fund up to 25 percent of the capital cost of authorized recycling projects, including the San Diego Area Water Reclamation Program, an inter-connected system of recycling projects serving the MWD Wastewater System service area. PL104-266, the Reclamation Recycling and Water Conservation Act of 1996, authorized two additional projects in northern San Diego County: the North San Diego County Area Water Recycling Project and the Mission Basin Brackish Groundwater Desalting Demonstration Project.

5.4.2.4 State Revolving Fund/Water Reclamation Loan Program

The State Revolving Fund (SRF) and the Water Reclamation Loan Program (WRLP) provide agencies with low-interest construction loans for water recycling and groundwater projects. The SRF and WRLP loans carry an interest rate equal to 50 percent of the state's general obligation bond interest rate. This below-market interest rate can result in substantial savings on debt service. In November 1996, Proposition 204 was approved by the voters and provided \$80 million for the SRF and \$60 million for WRLP. Proposition 13, approved by the voters in March 2000, provides an additional \$40 million for low-interest loans and grants for design and construction of water recycling projects to the existing water recycling funding program. Combining this with loan repayments from prior loans and funds remaining from Proposition 204, over \$100 million is available.

5.5 SDCWA Policies, Ordinances, and Guidance Documents

The SDCWA has adopted a number of policies, guidance documents, and a model ordinance to assist local agencies with water recycling project implementation. Many local agencies, including the District, have adopted the SDCWA-sponsored ordinance. The ordinance includes provisions that typically require new development projects to install recycled water systems. The ordinance also states that where allowed by law and available in sufficient quantities, at a reasonable cost and quality, recycled water shall be the sole water supply delivered for non-potable uses.

Water recycling guidance documents available from the SDCWA include: Model Rules and Regulations for Recycled Water Service, Construction Specifications for Recycled Water Systems, Retrofit Guidelines, and a Recycled Water User's Manual.

5.5.1 SDCWA Training Opportunities

Understanding similarities and differences between recycled and potable water is important to the successful operation of a recycled water system. The SDCWA, in partnership with other water agencies, offers a one-day certification course designed to provide irrigation supervisors with a basic understanding of recycled water. The class provides information to supervisors on the water recycling process, recycled water quality and safety issues, the duties and responsibilities of the supervisor, landscape irrigation fundamentals, maintenance and management, and cross connection control shut-down tests and inspections. Instructors include a state registered environmental health specialist and environmental assessor, water quality chemist/reclamation specialist, and landscape specialists. Completion of the Recycled Water Site Supervisor Training fulfills the training requirement as mandated by regulatory authorities.

5.6 District Commitment to Recycled Water Use

#50. (Describe the) actions, including financial incentives, which may be taken to encourage the use of recycled water, and the projected results of these actions in terms of acre-feet of recycled water use per year (10633(f)).

#51. (Provide a) plan for optimizing the use of recycled water in the supplier's service area, including actions to facilitate the installation of dual distribution systems to promote recirculating uses, to facilitate the increased use of treated wastewater that meets recycled water standards, and to overcome any obstacles to achieving that increased use (10633(g)).

In May 1990, the District adopted Ordinance No. 201, which set forth the policy of mandatory reclaimed water use wherever feasible. This ordinance was updated during the adoption of the District's Administrative Code Section establishing the agency's reclaimed water rules and regulations. Along with these policy statements is the realization that the District service area is now currently, and will be for the foreseeable future, isolated from an ocean outfall. All future development, which includes wastewater treatment, will also require 100 percent inland discharge via landscape or agricultural reclamation. With no ocean discharge option, there is little or no alternative other than to develop some form of reclamation for beneficial uses within the District service area.

With this in mind, the District Board has directed its staff to work with proponents of potential wastewater systems, including private interests as well as other governmental entities, to develop effective reclaimed water use plans for their respective projects. District staff has also been directed to facilitate the inclusion of near or adjacent properties in the wastewater development plans of the larger developments.

Finally, the Board has followed a policy of agreeing to ultimately accept ownership, operation and maintenance of the facilities meeting all of the District's engineering, operational, and financial requirements.

Actions used by the District to encourage recycled water use are summarized in Table 5-8.

Table 5-8. Actions Used to Encourage Recycled Water Use (DWR Table 25)					
Actions	Acre Feet of Use Projected to Result from this Action				
	2010	2015	2020	2025	2030
Financial incentives	N/A*	N/A*	N/A*	N/A*	N/A*
Other	N/A*	N/A*	N/A*	N/A*	N/A*
Total	N/A*	N/A*	N/A*	N/A*	N/A*

**At this time and the foreseeable future, VCMWD is an inland discharger of recycled water. By definition, all wastewater either flows to septic systems or will be recycled.*

Section 6

Water Conservation Best Management Practices

#26. (Describe and provide a schedule of implementation for) each water demand management measure that is currently being implemented, or scheduled for implementation, including the steps necessary to implement any proposed measures, including, but not limited to, all of the following: (A) water survey programs for single-family residential and multifamily residential customers; (B) residential plumbing retrofit; (C) system water audits, leak detection, and repair, (D) metering with commodity rates for all new connections and retrofit of existing connections; (E) large landscape conservation programs and incentives; (F) high-efficiency washing machine rebate programs; (G) public information programs; (H) high-efficiency washing machine rebate programs; (G) public information programs; (H) school education programs; (I) conservation programs for commercial, industrial, and institutional accounts; (J) wholesale agency programs; (K) conservation pricing; (L) water conservation coordinator; (M) water waste prohibition; (N) residential ultra-low-flush toilet replacement programs (10631(f)(1) and (2)).

#27. A description of the methods, if any, that the supplier will use to evaluate the effectiveness of water demand management measures implemented for described under the plan (10631(f)(3)).

#28. An estimate, if available, of existing conservation savings on water use within the suppliers service area, and the effect of the saving on the supplier's ability to further reduce demand (10631(f)(4)).

#29. An evaluation of each water demand management measure listed in paragraph (1) of subdivision (f) that is not currently being implemented or scheduled for implementation. In the course of the evaluation, first consideration shall be given to water demand management measures, or combination of measures, that offer lower incremental costs than expanded or additional water supplies. This evaluation shall do all of the following: (1) Take into account economic and noneconomic factors, including environmental, social, health, customer impact, and technological factors; (2) Include a cost-benefit analysis, identifying total benefits and total costs; (3) Include a description of funding available to implemented any planned water supply project that would provide water at a higher units costs; (4) Include a description of the water supplier's legal authority to implement the measure and efforts to work with other relevant agencies to ensure the implementation of the measure and share the cost of implementation (10631(g)).

#32. Include the annual reports submitted to meet the Section 6.2 requirements, if a member of the CUWCC and signer of the December 10, 2008 MOU (10631(j)).

Water conservation, or demand management, continues to be a significant part of regional water resource planning strategies in San Diego County. The District is committed to supporting these regional water conservation activities, and in many cases, provides indirect or direct financial assistance. In addition, the District implements local water conservation management measures to augment and complement these regional programs.

The unpredictable water supply and ever increasing demand on California's complex water resources have resulted in a coordinated effort by the DWR, water utilities, environmental organizations, and other interested groups to develop a list of urban BMPs for conserving water. This consensus-building effort resulted in a MOU Regarding Urban Water Conservation in California, which formalizes an agreement to

implement these BMPs and makes a cooperative effort to reduce the consumption of California's water resources. The BMPs as defined by the MOU are presented in Table 6-1. The BMPs as defined in the MOU are generally recognized as standard definitions of water conservation measures. The MOU is administered by the CUWCC. The District is currently an MOU signatory. A copy of 2009-2010 BMP Activity Reports are included in Appendix D.

The MOU requires that a water utility implement only the BMPs that are economically feasible. If a BMP is not economically feasible, the utility may request an economic exemption for that BMP.

Table 6-1. Water Conservation Demand Management Measures Listed in MOU

Revised (Current) CUWCC BMP Category			Former CUWCC BMP Name	
Category	BMP No.	BMP Name	BMP No.	BMP Name
Foundational BMPs	BMP 1	Utility Operations		
	BMP 1.1	Operations Practices		
	BMP 1.1.1	Conservation Coordinator	12	Conservation Coordinator
	BMP 1.1.2	Water Waste Prevention	13	Water Waste Prohibition
	BMP 1.1.3	Wholesale Agency Assistance	10	Wholesale Agency Assistance Programs
	BMP 1.2	Water Loss Control	3	System Water Audits, Leak Detection, and Repair
	BMP 1.3	Metering with Commodity Rates	4	Metering with Commodity Rates for all New Connections and Retrofit of Existing Connections
	BMP 1.4	Retail Conservation Pricing	11	Conservation Pricing
	BMP 2	Educational		
	BMP 2.1	Public Information	7	Public Education Programs
	BMP 2.2	School Education	8	School Education Programs
Programmatic BMPs	BMP 3	Residential		
	BMP 3.1	Residential Assistance	1 & 2	Water Survey Programs for Single-Family and Multi-Family Residential Customer (Indoor) and Residential Plumbing Retrofit
	BMP 3.2	Landscape Water Survey	1	Water Survey Programs for Single-Family and Multi-Family Residential Customer (Outdoor)
	BMP 3.3	High-Efficiency Clothes Washers	6	High-Efficiency Washing Machine Rebate Programs
	BMP 3.4	Water Sense Standard (WSS) Toilets	14	Residential ULFT Replacement Programs
	BMP 3.5	Water Sense Standard (WSS) for New Residential Development	(new)	
	BMP 4	Commercial Industrial Institutional (CII)	9	Conservation Programs for Commercial, Industrial, and Institutional Accounts
	BMP 5	Landscape	5	Large Landscape Conservation Programs and Incentives

The District conducts an ongoing water conservation program. A description of each BMP that is currently being implemented or scheduled for implementation, a schedule of implementation, and a method to evaluate effectiveness is provided in this section. The existing conservation savings are also discussed.

6.1 BMP 1. Utility Operations

6.1.1 BMP 1.1. Operations Practices

6.1.1.1 BMP 1.1.1. Conservation Coordinator

A conservation coordinator is an on-going component of the District's water conservation program. The conservation coordinator is responsible for implementing and monitoring the District's water conservation activities. A Conservation Coordinator has been selected and is in place. The Conservation Coordinator is Trish Garcia. The implementation of this BMP program has promoted and administered conservation programs since 1991 and is ongoing.

6.1.1.2 BMP 1.1.2. Water Waste Prohibition

Water waste prohibition is an ongoing component of the District's water conservation program. This District has adopted its own set of water conservation regulations.

A copy of the District's regulations is provided in Appendix E. Chapter 7 of this plan provides a description of the prohibited water uses in District's water waste regulations. The implementation of this BMP is ongoing.

6.1.1.3 BMP 1.1.3. Wholesale Agency Assistance Programs

This BMP is not applicable to the District because the District is not a wholesale agency.

6.1.2 BMP 1.2. Water Loss Control

A system water audit, leak detection and repair program consists of on-going leak detection and repair within the system, focused on the high probability leak areas. The District's pipelines are monitored for leaks with the use of a sophisticated leak detection listening device. Leaks can be detected early and are repaired in a timely manner. In addition, throughout the workday, the District's pipelines are traveled to access facilities and any sign of a potential leak is reported and further investigated. All meters are read on a monthly basis. Leak detection is on-going.

6.1.3 BMP 1.3. Metering with Commodity Rates

All District customers receive water through metered connections that bill by volume of usage. The District has not conducted a feasibility study to assess the merits of a program to provide incentives to switch mixed-use accounts to dedicated landscape meters.

6.1.4 BMP 1.4. Retail Conservation Pricing

The District currently implements non-volumetric sewer rates and uniform water rates for all of its customers. Uniform quantity charge is considered to meet the definition of conservation pricing. The implementation of this BMP is ongoing.

6.2 BMP 2. Educational

6.2.1 BMP 2.1. Public Information

6.2.1.1 BMP 2.1.1. Public Information Programs

Public information is an ongoing component of the District's water conservation program. Literature and brochures on water conservation and efficient landscapes are free to customers and are readily available. The information is geared towards all age groups and includes children's coloring books on water-wise use, water cycle and the history and source of our water supply. Extensive information on conservation practices is available on the District's web page along with links to conservation programs and a library of appropriate planting for the region. Water conservation is promoted through interactive games and distribution of information at events such as the May Water Awareness Celebration. Water workshops have been offered to customers in which participants receive hands-on experience and lessons on landscape sprinkler systems and landscape maintenance. The District's Water News newsletter is distributed to customers via an insert in the water bills. A display of xeriscaping principles and water efficient plants is located in the District's main lobby. The District's public information program is an ongoing, annual program.

6.2.1.2 BMP 2.1.2. School Education Programs

School education is an ongoing component of the District's water conservation program. The District uses SDCWA resources to implement this BMP along with the Water Education Program incorporated into the 6th grade Science and Geography curriculums and Water Education Program/Poster Contest for the 4th grade. Grade-appropriate materials are distributed to Grades K through 8th and high school. The District's school education program is an ongoing, annual program. The District began implementing this program in the year 1992.

6.3 BMP 3. Residential

6.3.1 BMP 3.1. Residential Assistance

6.3.1.1 Water Survey Programs for Single-Family Residential and Multi-Family Residential Connections (Indoor) and Residential Plumbing Retrofit

Water survey programs for single-family residential and multi-family residential connections consist of annual water audits, water use reviews, and surveys of past program participants. Audits are conducted by trained auditors and include installation of low flow devices. Audits identify water-use problems, recommend repairs, and, when appropriate, meter reading. Customers are provided with information packets that include the evaluation results and water savings recommendations. The District's targeting and marketing strategy consists of community outreach events approximately three times a year at which the District has sign-ups for the Water Wise program. This survey program is conducted annually and began in 1995.

Plumbing retrofit of existing residential accounts consists of providing low flow showerheads, faucet aerators, and toilet leak detection tablets to customers. The District works with local programs and businesses to offer free water conservation information and materials to residents. There is not an enforceable ordinance in effect in the service area requiring the replacement of high-flow showerheads and other water use fixtures with their low-flow counterparts. The District has reached 75 percent saturation. It is estimated that 90 percent of single-family households have low-flow showerheads. The low-flow device distribution program started in July 1996.

6.3.2 BMP 3.2. Landscape Water Survey

Water Survey Programs for Single-Family Residential and Multi-Family Residential Connections (Outdoor)

Similar to the indoor water survey programs, water survey programs for single-family residential and multi-family residential outdoor use consist of annual water audits, water use reviews, and surveys of past program participants. Audits identify water-use problems, recommend repairs, provide instruction in landscape principles, irrigation timer use and, when appropriate, meter reading. Customers are provided with information packets that include the evaluation results and water savings recommendations. This survey program is conducted annually and began in 1995.

6.3.3 BMP 3.3. High-Efficiency Clothes Washers

The District participates and promotes the High-Efficiency Washing Machine voucher program funded by the District and its wholesale water suppliers, MWD and SDCWA. Customers can obtain a voucher with a value of \$125.00 off the purchase price of a High-Efficiency Washer. The voucher is for a point of purchase discount. San Diego Gas and Electric, a local energy provider, offers rebates upon the purchase of selected high-efficiency washing machine models available on a first-come, first-served basis.

6.3.4 BMP 3.4. Water Sense Standard (WSS) Toilets

The District participates in a County-wide program in which participating residential customers are offered a voucher redeemable with local plumbing dealers for up to \$75 off the purchase price of an ultra-low flush toilet. The voucher is for a point-of-purchase discount only and eligibility requires replacement of an existing toilet that is 3.5 gallons per flush or more. No after-purchase rebates are available. The program is conducted annually.

6.3.5 BMP 3.5. Water Sense Standard (WSS) for New Residential Development

BMP 3.5 is a new BMP for the District.

6.4 BMP 4. Commercial Industrial Institutional (CII)

The District has identified and ranked commercial, industrial, and institutional customers according to use. The program does not include surveys of past program participants to determine if audit recommendations were implemented. This program does not include incentives related to the use of efficient water-use technologies. The District tracks CII program interventions and water savings and documents and maintains records on how savings are realized. This program is conducted annually.

6.5 BMP 5. Large Landscape Conservation Programs and Incentives

Potential customers are pre-screened by review of water usage data records as compared to typical patterns of SIC water usage. Customers that exhibit unusually high water usage relative to the size of the property are sent a letter and a program brochure, inviting them to participate in the program. Surveys include an irrigation system check, distribution uniformity analysis, review or development of an irrigation schedule, measurement of the landscape area, measurement of the total irrigable area, and a report and information provided for the customer. All customers receive an offer for a follow up survey.

The District does offer financial incentives such as vouchers. The District also provides landscape water use efficiency information to new customers and customers changing services. Workshops are held on irrigation management and Water-Wise Plant identification free of charge. Water-wise plants and the xeriscaping principles are promoted through lobby displays, brochures, and at community event. The

District does have water-efficient irrigated landscaping at the District facilities. This program began in 1990 and is conducted annually.

6.6 Economic Analysis Results

All pertinent Demands Management Measures (DMMs) were implemented in the District. Therefore, an evaluation of each DMM not being implemented is not necessary.

6.7 Additional Issues

This section describes additional issues required to be addressed by the Urban Water Management Planning Act. Non-economic factors, including environmental, social, health, customer impacts, and technological are not thought to be significant in deciding which BMPs to implement. There are no planned water supply projects that would provide water at a higher unit cost. The District has the legal authority to implement the BMPs.

Section 7

Water Supply Versus Demand Comparison

#53. Every urban water supplier shall include, as party of its urban water management plan, an assessment of the reliability of its water service to its customers during normal, dry, and multiple dry water years. This water supply and demand assessment shall compare the total water supply sources available to the water supplier with the total projected water use over the next 20 years, in five-year increments, for a normal water year, a single dry water year, and multiple dry water years. The water service reliability assessment shall be based upon the information compiled pursuant to Section 10631, including available data from state, regional, or local agency population projections within the service area of the urban water supplier (10635(a)).

This chapter provides a comparison of projected water supplies and demand. The Act requires that urban water agencies conduct a water shortage contingency analysis as part of their 2010 plan. This section includes the District's analysis, which addresses a catastrophic shortage situation as well as drought management.

Because of the recent occurrence of prolonged drought periods affecting the District's customers, the District is well prepared to implement both voluntary and mandatory conservation provisions when necessary. Conservation measures adopted during the two most recent drought periods proved effective, and many are contained in the Urban Water Shortage Contingency Plan adopted by the District in January 1992. The District's drought and emergency management measures are designed to deliver necessary water savings, while minimizing, to the extent possible, any negative effects on the lifestyles and economic basis of the District's customers. The District's Emergency Water Management Plan and Water Supply Shortage Response Program are presented on their website.

7.1 Current and Projected Water Supplies vs. Demand

This section provides a comparison of normal, single-dry, and multiple dry water year supply and demand for the District. Water demands are addressed in Chapter 3; water supply is addressed in Chapter 4; and recycled water supply is addressed in Chapter 5 of this Plan.

7.1.1 Current and Projected Normal Year Water Supplies vs. Demand

The normal water year current and projected water supplies are compared to the current and projected demand for the District in Table 7-1.

Table 7-1. Normal Year Water Supply and Demand Comparison, ac-ft/yr (DWR Table 32)

	2015	2020	2025	2030	2035 (optional)
Supply totals	45,968	46,020	51,603	57,682	64,157
Demand totals	31,536	31,486	33,424	35,383	37,508
Difference (supply minus demand)	14,432	14,534	18,179	22,299	26,649
Difference as a percent of supply	31.4%	31.6%	35.2%	38.7%	41.5%
Difference as a percent of demand	45.8%	46.2%	54.4%	63.0%	71.0%

Units of Measure: ac-ft/yr

Source: SANDAG Population Forecast and VCMWD

7.1.2 Current and Projected Single-Dry Year Water Supplies vs. Demand

Water use patterns change during dry years. During dry years some water agencies cannot provide their customers with 100 percent of what they deliver during normal water years. One way to analyze the change in demand is to document expected changes to water demand by sector. Expected changes in demand may include assuming increasing demands due to increased irrigation needs and demand reductions resulting from rationing programs and policies. Any demand reductions due to the implementation of the District's water shortage contingency plan are not included in the single dry year demand estimates.

Because no shortages are anticipated within the SDCWA's service area in the dry-year scenarios analyzed, the District also would not anticipate any shortages in single years through 2035. The following tables provide a comparison of a single dry year water supply with projected total water use over the next 25 years, in five-year increments. The supply and demand percentages of the normal year are based on the supply and demand percentages presented in MWD's 2010 RUWMP.

The current and projected water supplies are compared to the demands for a single dry year for the District in Table 7-2.

Table 7-2. Single-Dry Year Water Supply and Demand Comparison, ac-ft/yr (DWR Table 33)

	2015	2020	2025	2030	2035 (Optional)
Supply totals	42,291	42,338	47,475	53,067	59,024
Demand totals	33,522	33,533	35,617	37,759	40,063
Difference (supply minus demand)	8,768	8,805	11,858	15,309	18,961
Difference as a percent of supply	20.7%	20.8%	25.0%	28.8%	32.1%
Difference as a percent of demand	26.2%	26.3%	33.3%	40.5%	47.3%

Units of Measure: ac-ft/yr

Source: SANDAG Population Forecast and VCMWD

7.1.3 Projected Multiple-Dry Year Water Supplies vs. Demand

This section describes the impact of a multiple dry year period for each 5-year period during the 20-year projection. Because no shortages are anticipated within the SDCWA's service area in the dry-year scenarios analyzed, The District also would not anticipate any shortages in single or multiple dry years through 2030. Table 7-3 shows the District's multiple dry year assessment, summarizing the District's

total anticipated multiple dry year water demands along with the supplies projected to be available to meet these demands.

Table 7-3. Multiple-Dry Year Water Supply and Demand Comparison, ac-ft/yr, Period Ending in 2010 (DWR Table 34)						
		2015	2020	2025	2030	2035 (optional)
Multiple-dry year first year supply	Supply totals	42,769	42,817	48,011	53,667	59,692
	Demand totals	32,054	32,004	33,974	35,965	38,125
	Difference (supply minus demand)	10,714	10,813	14,037	17,703	21,566
	Difference as a percent of supply	25.1%	25.3%	29.2%	33.0%	36.1%
	Difference as a percent of demand	33.4%	33.8%	41.3%	49.2%	56.6%
Multiple-dry year second year supply	Supply totals	39,286	39,331	44,102	49,298	54,831
	Demand totals	32,700	32,649	34,658	36,689	38,893
	Difference (supply minus demand)	6,586	6,682	9,444	12,608	15,938
	Difference as a percent of supply	16.8%	17.0%	21.4%	25.6%	29.1%
	Difference as a percent of demand	20.1%	20.5%	27.2%	34.4%	41.0%
Multiple-dry year third year supply	Supply totals	43,627	43,676	48,974	54,744	60,889
	Demand totals	33,847	33,795	35,874	37,976	40,258
	Difference (supply minus demand)	9,779	9,881	13,100	16,767	20,631
	Difference as a percent of supply	22.4%	22.6%	26.7%	30.6%	33.9%
	Difference as a percent of demand	28.9%	29.2%	36.5%	44.2%	51.2%

Units of Measure: ac-ft/yr

Source: SANDAG Population Forecasts and VCMWD

7.2 Water Shortage Expectations

Because the District is entirely dependent on imported water, the reliability of the District's water supply is particularly vulnerable to shortages due to unexpected interruptions to the delivery system or prolonged periods of drought. A catastrophic water shortage occurs when a disaster, such as an earthquake, eliminates access to imported water supplies or results in insufficient water available to meet the region's needs.

As discussed in this chapter, the District has taken several actions to prepare for, and implement during, a catastrophic interruption of water supplies including, but not limited to, a regional power outage, an earthquake, or other disaster.

Because the District is entirely dependent upon the SDCWA for its water supply, the SDCWA analysis is summarized herein as well.

7.3 VCMWD Water Shortage Contingency Plan

#39. Consumption reduction methods in the most restrictive stages. Each urban water supplier may use any type of consumption reduction methods in its water shortage contingency analysis that would reduce water use, are appropriate for its area, and have the ability to achieve a water use reduction consistent with up to a 50 percent reduction in water supply (10632(e)).

Pursuant to Assembly Bill 11 (First Extraordinary Session), amending Section 10631 of the Water Code to require an Urban Water Shortage Contingency Plan, the District prepared an amended Urban Water Management Plan, including an Urban Water Shortage Contingency Plan, which was originally adopted by the VCMWD Board of Directors on January 20, 1992 by Resolution 1305. Many of the policies contained in the Contingency Plan are policies that were adopted by the VCMWD Board of Directors in 1991, in anticipation of continued drought. The operative provisions of the contingency plan, i.e., water shortage response, water use prohibitions, enforcement charges and penalties for excessive usage, are currently in place as part of the District's Administrative Code (Articles 230, 235, and 160). Articles 230, Water Supply Shortage Response Program, and 235, Emergency Water Management Plan, are included herein as Appendix E.

7.3.1 Stages of Action

#35. Stages of action to be undertaken by the urban water supplier in response to water supply shortages, including up to a 50 percent reduction in water supply, and an outline of specific water supply conditions which are applicable to each stage (10632(a)).

The District's water shortage contingency plan is based on four stages as defined in Table 7-4.

Table 7-4. Water Shortage Contingency Plan Stages (DWR Table 35)		
Stage (Level)	Water Supply Conditions	Percent shortage
Level 1 – Water Supply Shortage Watch	Supplies available to meet all demands; however, this is a water supply shortage watch condition, and a voluntary consumer demand reduction of up to 10 percent is requested by SDCWA	10-15%
Level 2 – Water Supply Shortage Alert Condition	Probability that supplies will not meet demands; consumers must reduce demand by 20 percent	20%
Level 3 – Water Supply Shortage Critical Condition	Supplies not meeting current demands; therefore, SDCWA has notified all member agencies that demand must be reduced by 40 percent	40%
Level 4 – Water Supply Shortage Emergency Condition	Major failure of a supply, storage, or distribution system; therefore, SDCWA has notified member agencies that a demand reduction of greater than 40 percent is required to balance regional demands with the anticipated supplies	40% and up

7.3.2 Three-Year Minimum Water Supply

#42. An estimate of the minimum water supply available during each of the next three water years based on the driest three-year historic sequence for the agency's water supply (10632 (h)).

The three-year minimum water supply is presented in Section 4 in Table 4-12 (DWR Table 31).

7.3.3 Catastrophic Supply Interruption Plan

#37. Actions to be undertaken by the urban water supplier to prepare for, and implement during, a catastrophic interruption of water supplies including, but not limited to, a regional power outage, an earthquake, or other disaster (10632(c)).

As shown in Table 7-5, the District has taken several actions for preparation of, and implementation during, a catastrophic interruption of water supplies.

Table 7-5. Preparation Actions for a Catastrophe	
Possible Catastrophe	Summary of Actions
Earthquake Fire/explosion Medical Flood Tornado/severe weather Bomb threat Hard freeze Loss of normal water supply Hazardous material release Contamination of District water supplies Terrorist attack	<p>No person shall knowingly use water or permit the use of water supplied by the District for commercial, industrial, agricultural, governmental, or any other purpose in a manner contrary to any provision of this article, in an amount in excess of the amounts authorized by this article, or during any period of time other than the periods of time specified in this article. At no time shall water be wasted or used unreasonably.</p> <p>It is anticipated that these measures will result in a reduction in water use from a base period to be determined at the time of declaration. During the emergency, the following measures shall apply except when reclaimed or private well water is used:</p> <ol style="list-style-type: none"> 1. All outdoor landscape irrigation is prohibited. 2. Use of water for agricultural or commercial nursery purposes shall be permitted under conditions set forth by the District based upon the severity and anticipated duration of the shortage. Livestock watering will be permitted on an as needed basis with a prohibition against non-essential use. 3. Washing of autos, trucks, trailers, boats, airplanes and other types of mobile equipment is prohibited. Such washings are exempted from these regulations where the health, safety and welfare of the public is contingent upon frequent vehicle cleaning such as garbage trucks and vehicles used to transport food and perishables. 4. Filling, refilling or adding of water to swimming pools, spas, ponds and artificial lakes is prohibited. 5. Watering of all golf course areas, except greens, is prohibited. Watering of parks, school grounds and recreation fields is prohibited with the exception of plant materials classified to be rare, exceptionally valuable, or essential to the well being of rare animals. 6. The use of water from fire hydrants shall be limited to fire fighting or to maintain the health, safety and welfare of the public. 7. Restaurants shall not serve water to their customers except when specifically requested. 8. The operation of any ornamental fountain or similar structure is prohibited. 9. New construction meters or permits for unmetered service will not be issued. Construction water shall not be used for earth work or road construction purposes. 10. The use of water for commercial manufacturing or processing purposes shall be permitted under conditions set forth by the District based upon the severity and anticipated duration of the shortage.

7.3.4 Prohibitions, Consumption Reduction Methods, and Penalties

#38. Additional mandatory prohibitions against specific water use practices during water shortages, including, but not limited to, prohibiting the use of potable water for street cleaning (10632(d)).

#40. Penalties or charges for excessive use, where applicable (10632(f)).

Section 10632(d) of the Act states that an agency's urban water shortage contingency analysis shall include the following element: Additional mandatory prohibitions against specific water use practices during water shortages, including, but not limited to, prohibiting the use of potable water for street cleaning.

The District's Contingency Plan incorporates Article 230, "Water Supply Shortage Response Program," adopted on September 2, 2008, replacing the previous Article 230, "Water Conservation Program", and Article 235, "Emergency Water Management Plan," adopted on February 19, 1991. These Articles, included herein as Appendix E, contain mandatory provisions to reduce water usage, and include prohibitions against specific wasteful practices. Table 7-6 indicates at which stages various prohibitions are considered Voluntary as opposed to Mandatory. Mandatory prohibition consumption reduction methods, and penalties in the District's water shortage contingency plan are presented in Appendix E and summarized below in Tables 7-6 through 7-8 to conform to the UWMP guidelines. Appendix F contains the Water Supply Shortage Response Program.

Table 7-6. Mandatory Prohibitions (DWR Table 36)

Prohibitions	Stage When Prohibition Becomes Mandatory
Street/sidewalk cleaning	All Stages
Washing cars	Any Mandatory Stage
Watering lawns/landscapes	Any Mandatory Stage
Uncorrected Plumbing Leaks	All Stages
Gutter Flooding	All Stages

Table 7-7. Consumption Reduction Methods (DWR Table 37)

Examples of Consumption Reduction Methods	Stage When Method Takes Effect	Projected Reduction
Demand Reduction Program	All Mandatory Stages	Demand reduction program would implement rates, charges and fines to affect the required level of reduction as determined by wholesale supplier.
Flow Restriction	Repeat Violations	Minimal impact.
Mandatory Percentage Reduction	All Mandatory Stages	As required by wholesale supplier.
Restrict for Only Priority Uses	Water Supply Interruption	MWD IAWP interruption would be at the 30% level initially and then at what ever level determined necessary by MWD.
Use Prohibitions	All Mandatory Stages	As required by wholesale supplier.
Water Shortage Pricing	All Mandatory Stages	As required by wholesale supplier.
Education Program	All Stages	Minimal impact.
Voluntary Rationing	Voluntary Stages	Up to 10% reduction.
Mandatory Rationing	All Mandatory Stages	As required by wholesale supplier.

Table 7-8. Penalties and Charges (DWR Table 38)

Examples of Penalties and Charges	Stage When Penalty Takes Effect
Water Conservation Program Violation – Citation	First Violation
Water Conservation Program Violation – Penalty of \$100 placed on water bill	Second Violation
Water Conservation Program Violation – Penalty of \$250 placed on water bill, and a restriction of service to 5 gallons per minute for 120 hours	Third Violation
Water Conservation Program Violation – Penalty of \$500 placed on the water bill, and after a 15 day written notification, a flow restriction of 5 gallons per minute for 120 hours (5 days) and the customer will be charged for the installation and removal of the flow restrictor.	Fourth Violation
Water Conservation Program Violation – Penalty of \$1,000 placed on water bill, and after a 15 day written notification, complaint filed with the County of San Diego District Attorney's office, flow restriction imposed and sustained to 5 gallons per minute until disposition of complaint and the customer will be charged for the installation and removal of the flow restrictor.	Fifth Violation
Emergency Water Plan Violation – Citation	First Violation
Emergency Water Plan Violation – Penalty equal to 25% of previous month's water bill and service of water limited to not less than 5 gpm and not more than 10 gpm for a period not to exceed 72 hours.	Second Violation
Emergency Water Plan Violation – Penalty equal to 50% of the previous month's water bill and service of water terminated for a period not to exceed 48 hours.	Third Violation

7.3.5 Analysis of Revenue Impacts of Reduced Sales During Shortages

#41. An analysis of the impacts of each of the actions and conditions described in subdivisions (a) to (f), inclusive, on the revenues and expenditures of the urban water supplier, and proposed measures to overcome those impacts, such as the development of reserves and rate adjustments (10632(g)).

The Act also requires that an agency's urban water shortage contingency analysis include an analysis of the impacts of the various water shortage responses on the revenues and expenditures of the urban water supplier. Tables 7-9 and 7-10 list some impacts on revenues and expenditures that have been encountered in the past or are anticipated in the future.

Table 7-9. Actions and Conditions that Impact Revenues

Type	Anticipated Revenue Reduction
Review of Rate Adjustment	No impact. This would be an administrative function to analyze rate structure options to offset potential losses in revenue associated with reduced sales.
Development of Reserves	No impact. The District has existing operating, water rate and power rate stabilization reserves as well as reserves for capital improvements.
Change in Quantity of Sales	<p>Approximately 25% of the revenue collected by the District is utilized to purchase water from MWD and the SDCWA and power for pumping from SDG&E. Consequently, a reduction in water deliveries will have effect a direct and commensurate reduction in those expenses. Of the \$5.1 million needed to fund local operation and maintenance (O & M) costs in fiscal year (FY) 2010-2011, \$1.5 million comes from non-commodity based sources, such as taxes, monthly meter service charges, investment and other revenue. Consequently, the associated reduction in commodity based revenues generated to cover local O & M costs would be offset by a combination of budget reductions, expense deferrals, including some non-critical CIP projects, draws on rate stabilization and operating reserves, and rate adjustments.</p> <p>Water sales revenue increased by 3.0%, or \$780,901, from the prior year. There was a 15.7% decrease in the volume of water sold. In 2009-10, 27,837 acre feet of water were billed compared to 33,014 acre feet in the prior year. On January 1, 2010, water rate increases were 14.8% for domestic, 15.3% for the San Diego County Water Authority Special Agricultural Water Rate (SAWR), and 21.8% for the Metropolitan Water District Interim Agricultural Water Program (IAWP), due to increases in wholesale costs from the District's suppliers. Meter charges were basically unchanged, \$3,301,357 in 2008-09 compared to \$3,305,235 in 2009-10.</p>
Impact on Customer's Bill	Initially, the only impact on the customer's bill would come if the customer exceeded the allowed usage levels and incurred a violation. If the shortage extended beyond a one to two full years and all reasonable short-term spending adjustments had been exhausted and prudent draws on reserves had been made, rates would then have to be adjusted by the percentage necessary to offset short-term revenue deficits.
Distribution of Customer Impacts Between Customer Types	The agency has two customer classes IAWP & SAWR. Reductions to the IAWP customer class would be as per the MWD IAWP program, or an initial interruption of 30%, and then additional reductions based upon water supply condition. Reduction to the SAWR class would be determined by the wholesale suppliers to the agency, MWD and the SDCWA.
Impacts to Water Supplier of Higher Rates and Penalties	Given the very high percentage of cost being associated with variable wholesale water costs and power costs, the fact that nearly 30% of the revenue needed to supply local needs comes from non-commodity based sources, and the ability of the agency to defer various CIP expenditures if need be, the short-term (1 to 2 years) impact on the agency would be very manageable. If the water supply reduction were to become a long-term condition (beyond 3 years) adjustments would be made in the operational and staffing levels as well as in the rate structure.
Cost Recovery Reviews	In the short-term, cost recovery would not be a significant issue, as budget adjustments and draws on reserves established specifically for such purposes would have covered the short-term revenue reductions. If the conditions were long-term, more permanent adjustments in operational and staffing levels as well as the rate structure would have to reviewed and evaluated.

Table 7-10. Actions and Conditions that Impact Expenditures

Category	Anticipated cost
Change in Quantity of Sales	Referring to the discussion for the same category in Table 7-11, given the mix of costs associated with whole water and power purchases and fixed versus variable revenues for local costs, the actual short-term impact associated with the loss of sales is minimal. As an example, for the current FY 2010-2011, of the \$32 million in commodity based water and power revenue, only \$4.25, million, or 13% is directed to cover local O & M costs, so the reduction in total commodity based revenues is not a dollar for dollar reduction in revenues needed for local, non-variable expenses. For example, a 20% reduction in total commodity related revenues, or \$6.4 million, would only result in a \$840,000 loss in revenue for local O & M costs, which, in the short-term could be offset with budget adjustments, moderate CIP deferrals and draws on existing reserves. Again, in this example, if a rate increase were implemented, it would only require a 3% overall rate increase on the remaining 70% of normal sales to offset the revenue loss needed to fund local costs.
Cost Recovery Reviews	None – would be completed by current administrative and financial staff.
Increased Staff/Salaries/Overtime	None- existing staff would be re-assigned to perform functions required to implement and enforce mandatory use provisions and rate features needed to reduce consumption.
Increased Costs of New Supplies, Transfers or Exchanges	New supplies would be secured by wholesale suppliers and the cost would be melded into the overall wholesale cost. It is anticipated that the wholesale costs could be increased by as much 25% overall to secure additional supplies, which would be passed through to agency retail customers.

Revenue impacts specified in the Contingency Plan would be offset with a combination of the following:

1. An increase in water commodity and service charges
2. A reduction in annual operating expenses
3. Reserves currently earmarked for long range capital
4. General tax fund revenues currently earmarked for future capital improvements

It is anticipated that Option Number 4, the diverting of general tax and water availability/stand by revenues, would be the least disruptive. Methods to mitigate revenue/expenditure impacts are shown in Tables 7-11 and 7-12.

Table 7-11. Proposed Measures to Overcome Revenue Impacts

Name of Measures	Summary of Effects
Reserve Fund	This option would have no impact on the rate payers or the agency as there are currently rate stabilization, operating and CIP reserves established, funded and available for use as intended. In the long term, rates would be raised to replenish reserves.
Change Rate Structure	As demonstrated in table 7-12 and 7-13, given the mix of wholesale and power costs and commodity and non-commodity based revenues for local non-variable costs, changes in rates to offset significant reductions in available water supplies would be minimal.
Reduce Overhead	Overhead, or local fixed O & M costs, can be reduced in the short and mid-term by deferring selected cash-funded CIP and major maintenance projects, other expenditure reductions and if needed, hiring freezes.
Decrease Capital Expenditures	Most of the District's CIP is cash funded and is for replacement of existing infrastructure. Deferral of selected, non-critical replacement projects will have little or no impact on the agency or its customers, and would only extend out in time the master planned replacement schedule. Infrastructure for new development is funded by new development and progresses at the rate needed by new development projects.
Revise Planning Estimates	If supply reduction were long-term, the District would make commensurate adjustments to its' CIP schedule, anticipated Corporate Facility requirements, staffing levels and retail rate structures based upon lower retail sales that currently anticipated. Impacts would be moderate and implemented over time.

Table 7-12. Proposed Measures to Overcome Expenditure Impacts

Name of Measures	Summary of Effects
Reserve Fund	In the long term, the reserves would be exhausted.
Change Rate Structure	Given the mix of wholesale water and power expenditure, non-commodity revenues needed to cover local fixed costs, availability of reserves and the flexibility to adjust CIP expenditures, short -term (1 to 2 year) impacts would non-existent to eligible, mid-term (3 years) moderate and long-term (beyond three year) moderate and incremental.
Reduce Overhead	In the short-term and mid-term, over-head, or local costs can be reduced by deferring non-critical CIP and major maintenance expenditures, and in the long-term by adjusting operational and staffing levels and retail water rate structures to incorporate the reality of lower retail water sales than previously anticipated.
Decrease Capital Expenditures	In the short-term, there could be a decrease in the level or, if need be, even a total interruption in the expenditures for the agency's facility replacement program. In the mid, to long term, adjustments would be to the retail rate structure and to the prioritization schedule to ensure that projects critical to service and system reliability were implemented
Revise Planning Estimates	If the reduced supply is determined to be a long-term condition, then commensurate adjustments would be incorporated into long-term staffing, corporate facility and water system facility expansion and facility requirements.

7.3.6 Reduction Measuring Mechanisms

#43. A mechanism for determining actual reductions in water use pursuant to the urban water shortage contingency analysis 10632(i).

Section 10632(i) of the Act states that an agency's urban water shortage contingency analysis shall include the following element: A mechanism for determining actual reductions in water use pursuant to the urban water shortage contingency analysis.

The mechanisms needed to determine actual water reductions operate on an ongoing basis. All water received from the SDCWA is metered and monitored. Additionally, all District customers are metered and billed monthly with computerized equipment. Each customer or customer group can be evaluated as to compliance with conservation requirements. Methods used by the District to determine actual reductions in water use are summarized in Table 7-13.

Table 7-13. Reduction Measuring Mechanisms	
Mechanism for Determining Actual Reduction	Type and Quality of Data Expected
Use Normalized or Average Water Use Baseline to Determine Reductions	Each customer will be given a schedule of monthly use targets based upon the required reduction compared to the base period usage. Usage over the amount allocated for any given month will result in the customer incurring penalty pricing for usage that month. Usage under that amount will be accumulated to possible offset over-usage in successive month period.
More Frequent Review of Production	Water production is currently monitored on a real-time basis through the district's SCADA system, and reviewed on a daily basis.
More Frequent Meter Reading at Customer Location	Customer meters are read on a monthly basis which would coincide with the monthly allocation periods. Customers are given information on how to read their meter and monitor their own usage, and in the last drought program (91'-92') customers did monitor their own usage so as to avoid penalty pricing. More frequent reading by the agency would not be practical or produce useful data.
More Frequent Leak Detection and Repair	Leak detection and repair is currently an active and ongoing O&M function, so no major changes would be expected.
More Frequent Meter Checking and Repair	Currently the District's unaccounted for water factor ranges between 5% and 6% which is well within AWWA standards. However, methods to further reduce this factor through more frequent meter change-out and replacement are currently being evaluated and may be incorporated in the future agency budgets, irrespective of water supply conditions.
System Audit	The water system is currently audited in a monthly and the annual basis, comparing metered deliveries from the SDCWA to meters deliveries to retail customers. The agency is not aware of a methodology which would improve data collection in this area.
Automated Sensors and Telemetry	The District currently has a full telemetry system and is converting that system over to SCADA, which does now and will contain features to provide real-time monitoring and alarms communication to on-call operators for abnormalities in reservoir fill rates, draw-down rates, and pump function, which can be associated system leaks and other malfunctions which could result in water loss.
Monitor Utility Actions	All utility actions are monitored and reported in a comprehensive District Activities Report provided to the District's Board of Directors on a monthly basis. Other types of staff reports on agency activities are given at the two regular Board Meeting each month or on as needed basis by the General Manager.
Penalties for Customers	If and when penalty pricing were to implemented, the amount and frequency of penalties would be monitored by the agency's computerized billing system and then reported to the management staff and on to the Board of Directors on a monthly basis.

As demonstrated in previous sections of this document, the operative provisions of the District's Contingency Plan (i.e., water shortage response, water use prohibitions, enforcement charges, and penalties for excessive usage) are currently in place as part of the Valley Center Municipal Water District's Administrative Code. Relevant Administrative Code articles are included as Appendix E of this Plan.

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San Diego Association of Governments (SANDAG) 2050 Regional Growth Forecast – Subregional Area 53 – Valley Center, 2011.

San Diego County Water Authority (SDCWA) Urban Water Management Plan, 2010.

Urban Water Management Planning Act (Act) (California Water Code Division 6, Part 2.6, Sections 10610 through 10657).

Valley Center Municipal Water District (VCMWD), Comprehensive Annual Financial Report (CAFR), June 30, 2010.

Valley Center Municipal Water District, correspondence with Dianne Kilwein, Gary Arant, and Wally Grabbe (various dates)

Valley Center Municipal Water District, Water Master Plan, 2002.

Valley Center Municipal Water District (VCMWD), Fiscal Year Annual Budget 2010-2011, June 21, 2010.

Western Region Climate Center, Escondido 2, California (COOP) Station, 2011.

Appendix A

Notice of Public Hearing and Published Public Comments

PROOF OF PUBLICATION

State of California

County of San Diego

I am a citizen of the United States and a resident of the County aforesaid: I am over the age of 18 years, and not a party to or interested in the above-entitled matter. I am the principal clerk of the publisher of the Valley Roadrunner, a newspaper of general circulation, published weekly in the community of Valley Center, County of San Diego, and which newspaper has been adjudged a newspaper of general circulation by the Superior Court of the County of San Diego, State of California, under the date of April 29, 1977, Case number N 8284; that the notice, of which the annexed is a printed copy, has been published in each regular and entire issue of said newspaper and not in any supplement thereof on the following dates, to wit:

4/20, 4/27 in the year 2011

I certify (or declare) under penalty of perjury that the foregoing is true and correct.

Dated at Valley Center

California, this 27th day of April, 2011

Jeanne Offenhausser
Signature

Valley ROADRUNNER

29277 Valley Center Road, Valley Center, CA 92082
P.O. Box 1529
(760)749-1112
FAX (760)749-1688

VALLEY ROADRUNNER

Proof of Publication of

NOTICE OF PUBLIC HEARING

Notice is hereby given that the Board of Directors of the Valley Center Municipal Water District will hold a public hearing to receive input on its Draft 2010 Urban Water Management Plan Update at the regularly scheduled Board meeting of Monday, June 20, 2011, beginning at 2:00 p.m. in the Board Room of the Valley Center Municipal Water District's offices at 29300 Valley Center Road, Valley Center, CA 92082.

The 2010 Urban Water Management Plan Update is prepared in response to the California Urban Water Management Planning Act included in the State Water Code which requires that each urban water supplier providing water for municipal purposes to more than 3,000 customers or supplying more than 3,000 acre feet of water annually, shall prepare, update and adopt an Urban Water Management Plan at least once every five years and submit the Plan to the California Department of Water Resources.

Copies of the Plan will be available for review at the District office and the Valley Center Library or on the District website (www.vcmwd.org) beginning May 20, 2011. Members of the public are invited to attend the hearing and present their views on the Valley Center Municipal Water District's draft "2010 Urban Water Management Plan Update." Written comments should be filed with the Engineering Department prior to the hearing at 29300 Valley Center Road, P.O. Box 67, Valley Center, CA 92082.

Wally Grabbe, PE
District Engineer

(April 20, & 27, 2011)

Appendix B

Adopted Resolution

RESOLUTION NO. 2011-25

**RESOLUTION OF THE BOARD OF DIRECTORS OF THE
VALLEY CENTER MUNICIPAL WATER DISTRICT
ADOPTING THE 2010 URBAN WATER MANAGEMENT PLAN UPDATE**

WHEREAS, California Water Code Section 10610 etc. seq., known as the Urban Water Management Planning Act (Act), mandates that every urban water supplier providing water for municipal purposes to more than 3,000 customers or supplying more than 3,000 acre feet of water annually, prepare an urban water management plan (Plan), the primary objective of which is to plan for the conservation and efficient use of water; and

WHEREAS, the Act states that urban water suppliers should make every effort to assure the appropriate level of reliability in its water service is sufficient to meet the needs of its various categories of customers during normal, dry and multiple dry years; and

WHEREAS, water conservation is recognized as an integral part of all water programs, and the proper and cost effective conservation of our water resources is essential to insuring adequate water supplies now and in the future; and

WHEREAS, the Valley Center Municipal Water District completed an Urban Water Management Plan on December 16, 1985, and subsequently it's Urban Water Shortage Contingency Plan. Urban Water Management Plan Updates were approved and adopted by the District for years 1990, 1995, 2000 and 2005; and

WHEREAS, the Plan shall be reviewed at least once every five years, and that the Valley Center Municipal Water District shall make any amendments or changes to its Plan which are indicated by the review; and

WHEREAS, the 2010 Plan Update, adopted after public review and hearing, will be filed with the California Department of Water Resources within thirty days of adoption; and

WHEREAS, the Valley Center Municipal Water District has completed an Urban Water Management Plan, 2010 Update pursuant to the requirements of California Water Code Section 10610 etc. seq., which has been circulated for public review and a noticed public hearing regarding said 2010 Plan was held by the Valley Center Municipal Water District on June 20, 2011; and

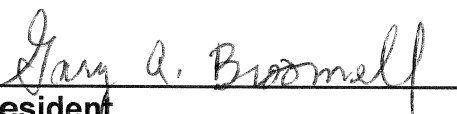
NOW, THEREFORE, IT IS HEREBY RESOLVED, that the Board of Directors of the Valley Center Municipal Water District approves and adopts the "2010 Urban Water Management Plan Update" for the Valley Center Municipal Water District.

PASSED AND ADOPTED this 20th day of June 2011, by the following vote, to wit:

AYES: Directors Broomell, Polito, Aleshire, Stone and Haskell

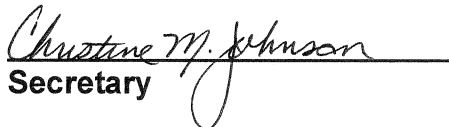
NOES: None

ABSENT: None



President

ATTEST:



Secretary

Appendix C

VCMWD's 2010 Water Quality Report

Your Water Agency's Source of Supply

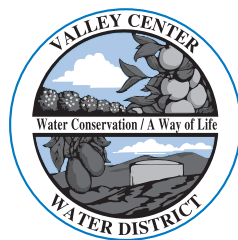
For the Valley Center Municipal Water District, your retail water supplier, the sole source of water for our 25,630 customers is the Metropolitan Water District of Southern California (Metropolitan) through the aqueduct facilities owned and operated by the San Diego County Water Authority.

Metropolitan imports water into Southern California from two sources: a 242-mile-long aqueduct that brings Colorado River water from Lake Havasu, and a 444-mile-long aqueduct that carries water from the Sacramento-San Joaquin Delta. Water from these sources travels to the Metropolitan system through pressurized large diameter pipes, open aqueduct canals and open reservoirs. The supply is then treated at the Robert F. Skinner Filtration Plant located in Western Riverside County.

In December 2002, Metropolitan Water District of Southern California completed its source water assessment of its Colorado River and State Water Project supplies. Colorado River supplies are considered to be most vulnerable to recreation, urban/storm water runoff, increasing urbanization in the watershed and wastewater. State Water Project supplies are considered to be most vulnerable to urban/storm water runoff, wildlife, agriculture, recreation and wastewater. A copy of the assessment can be obtained by contacting Metropolitan by phone at (213) 217-6850.

After treatment at the Skinner Filtration Plant, the water flows into five aqueduct pipelines and is delivered to the Valley Center Municipal Water District. Once in the Valley Center system, which includes 297 miles of water mains, 42 reservoirs, and 27 pumping stations, the water supply remains in pressurized pipelines and covered reservoirs, further protecting its quality.

Valley Center Municipal Water District's Water Sources



VALLEY CENTER MUNICIPAL WATER DISTRICT

29300 Valley Center Road

P. O. Box 67

Valley Center, CA 92082

(760) 749-1600

Fax (760) 749-6478

email: vcwater@vcmwd.org

web: www.valleycenterwater.org

VALLEY CENTER MUNICIPAL WATER DISTRICT

2009 WATER QUALITY REPORT



Consumer Confidence Report

Annual Report on Water Quality for 2009

Valley Center Municipal Water District 2009 Water Quality Report

Este informe contiene información muy importante sobre su agua. Tradúzcalo ó hable con alguien que lo entienda bien.

Valley Center Municipal Water District is committed to supplying safe water that meets or surpasses state and federal safety standards and achieves the highest standards of customer satisfaction. ***The U.S. Environmental Protection Agency (EPA) and the California Department of Public Health (CDPH) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems and require the publication and distribution of this report to our customers and the community we serve.***

We are pleased to report that the quality of water delivered by the Valley Center Municipal Water District meets or exceeds all state and federal standards. ***Your tap water is safe to drink.***

This report is a snapshot of the water quality of the Valley Center M.W.D.'s water deliveries in calendar year 2009. Included are details about where the water comes from, what it contains, and how it compares to the California Department of Public Health standards. If you are interested in more information about your water supply or water supplier, please feel free to contact our administrative offices at 760-749-1600, reach us on our website: www.valleycenterwater.org (which includes links to Metropolitan and the San Diego County Water Authority) or attend one of our Board meetings on the 1st and 3rd Mondays of each month, at 2:00 p.m. Meetings are held at the District Offices, 29300 Valley Center Rd., Valley Center, and are open to the public.

For specific questions or information about water quality, please contact our Field Operations Department and ask for Thad Klimas or Greg Hoyle.

Water Quality Information

Generally, the sources of drinking water (both tap and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:

- 💧 ***Microbial contaminants***, such as viruses and bacteria, that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- 💧 ***Inorganic contaminants***, such as salts and metals, that can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- 💧 ***Lead***, if present and at elevated levels, can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The Valley Center Municipal Water District is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at <http://www.epa.gov/safewater/lead>.
- 💧 ***Pesticides and herbicides***, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.
- 💧 ***Organic chemical contaminants***, including synthetic and volatile organic chemicals that are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.
- 💧 ***Radioactive contaminants***, which can be naturally-occurring or be the result of oil and gas production and mining activities.

Are there any precautions the public should consider?

As previously stated, the water supplied by the Valley Center Municipal Water District meets or exceeds all State and Federal safety standards and is safe to drink. However, all drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily

indicate that water poses a health risk. In order to ensure that tap water is safe to drink, EPA and CDPH prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. ***More information about contaminants and potential health effects can be obtained by calling the USEPA's Safe Drinking Water Hotline (1-800-426-4791) or by viewing the USEPA's website at www.epa.gov/safewater.***

CDPH regulations also establish limits for contaminants in bottled water that must provide the same protection for public health.

Some people may be more vulnerable to contaminants in drinking water than the general population. ***Immunocompromised persons*** such as persons with ***cancer undergoing chemotherapy***, persons who have undergone ***organ transplants***, people with ***HIV/AIDS*** or other ***immune system disorders***, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. ***EPA/Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (1-800-426-4791).***

What is your water supplier doing to keep the tap water safe?

Under the guidance of the CDPH, the Valley Center Municipal Water District regularly conducts over 400 tests from 21 strategically positioned sample points to guarantee a safe level of disinfectant residual and the bacteriological safety of your water supply. We also monitor our supply for the levels of Trihalomethanes and Haloacetic Acids, which are disinfection byproducts and are suspected to be human carcinogens. Finally, the District administers an active and aggressive Backflow Prevention Program, which protects our water supply from the possibility of contamination coming from the customer's side of the meter.

In addition to our water quality efforts, the Metropolitan Water District performs over 300,000 analyses each year to monitor over 115 contaminants and characteristics of its supplies, including tests for water clarity (Turbidity), organic chemicals (pesticides, PCB's), volatile organic compounds, inorganic compounds, disinfection byproducts (DBP's), disinfectant residuals and radionuclides. Metropolitan also monitors for contaminants that are not yet regulated (i.e., assigned a safety limit) to help EPA and CDPH to determine where certain contaminants occur and whether the contaminants need to be regulated in the future.

PARAMETER (a)	Units	MCL (MRDL)	PHG (MCLG) (MRDLG)	Test Results Range	Test Results Average	Major Sources in Drinking Water
Percent State Project Water	%	NA	NA	6-52	29	
PRIMARY STANDARDS – MANDATORY HEALTH RELATED STANDARDS						
CLARITY						
Combined Filter Effluent Turbidity	NTU %	0.3 95(b)	NA	Highest % <0.3	0.08 100%	Soil runoff
MICROBIOLOGICAL						
Heterotrophic Plate Count (HPC) (i)	CFU/mL	TT	N/A	ND	ND	Naturally present in the environment
Total Coliform Bacteria (c)(s)	%	5.0	0	NA	0	Naturally present in the environment
Fecal Coliform Bacteria and E. Coli (c) (s)	CFU/mL	0	0	0	0	Human and animal fecal waste
Cryptosporidium (l)	Oocysts/ 200L	TT	0	ND	ND	Human and animal fecal waste
Giardia (l)	Cysts/ 200L	TT	0	ND	ND	Human and animal fecal waste
SEMI-VOLATILE ORGANIC COMPOUNDS						
Acrylamide	NA	TT	0	TT	TT	Water treatment chemical impurities
Epichlorohydrin	NA	TT	0	TT	TT	Water treatment chemical impurities
INORGANIC CHEMICALS						
Barium	ppb	1000	2000	ND-110	ND	Oil and metal refineries discharge; natural deposit erosion
Copper (f) Tri-annual (2007)	ppm	AL = 1.3	0.3	90 th Percentile	0.261	Internal corrosion of household plumbing; natural deposit erosion
Fluoride Treatment-related (q)	ppm	2.0	1	0.7-1.3	0.8	Water additive for dental health
Lead (f) Tri-annual (2007)	ppb	AL = 15	0.2	90 th Percentile	<5	Internal corrosion of household plumbing; natural deposit erosion
Nitrate (as N) (k)	ppm	10	10	ND- 0.4	ND	Runoff and leaching from fertilizer use; sewage; natural deposit erosion
Perchlorate (j)	ppb	6	6	ND	ND	Industrial waste discharge
RADIOLOGICAL						
Gross Alpha Particle Activity	pCi/L	15	0	3.3-4.3	3.6	Erosion of natural deposits
Gross Beta (o) Particle Activity	pCi/L	50	0	ND-8.8	ND	Decay of natural and man-made deposits
Uranium	pCi/L	20	0.43	2.3-2.7	2.5	Erosion of natural deposits
DISINFECTION BY-PRODUCTS, DISINFECTANT RESIDUALS, AND DISINFECTION BY-PRODUCTS PRECURSERS						
Total Trihalomethanes (e)	ppb	80	NA	24.1-50.9	33.2	By-product of drinking water chlorination
Haloacetic Acid (d)	ppb	60	NA	8.9-22.1	16.6	By-product of drinking water chlorination
Total Chlorine Residual	ppm	4	4	1.5–3.0	2.4	Drinking water disinfectant added for treatment
DBP Precursors Control	ppm	TT	NA	TT	TT	Various natural and man-made sources
SECONDARY STANDARDS – AESTHETIC STANDARDS						
Chloride	ppm	500	NA	93-100	97	Runoff/leaching from natural deposits; seawater influence
Color	Units	15	NA	1-2	2	Naturally occurring organic materials
Methyl-tert-Butyl-Ether (MTBE) (m)	ppb	5	13	ND	ND	Gasoline discharge from watercraft engines
Odor Threshold (h)	Units	3	NA	0-<1	<1	Naturally occurring organic materials
Specific Conductance	uS/cm	1600	NA	760-1100	960	Substances that form ions in water; seawater influence
Sulfate	ppm	500	NA	130-250	220	Runoff/leaching from natural deposits; industrial waste
Total Dissolved Solids (TDS)	ppm	1000	NA	440-640	580	Runoff/leaching from natural deposits; seawater influence
Turbidity (b)	NTU	5	NA	0.04-0.05	0.05	Soil runoff
OTHER PARAMETERS						
Alkalinity	ppm	NA	NA	94- 120	110	
Boron	ppb	NL-1000	NA	130-140	140	Runoff/leaching from natural deposits; industrial waste
Calcium	ppm	NA	NA	44-74	65	
Chlorate	ppb	NL=800	NA	ND-79	34	By-product of drinking water chlorination; industrial processes
Chromium VI (n)	ppb	NA	NA	0.08-0.23	0.16	Industrial waste discharge; could be naturally present as well
Corrosivity (p) (as Aggressive Index)	AI	NA	NA	11.9-12.3	12.2	Elemental balance in water; affected by temperature, other factors
Corrosivity (g) (as Saturation Index)	SI	NA	NA	0.08-0.39	0.31	Elemental balance in water; affected by temperature, other factors
Hardness	ppm	NA	NA	190-300	270	Municipal and industrial discharges
Magnesium	ppm	NA	NA	20-29	26	
N- Nitrosodi- Methylamine (NDMA) (r)	ppb	NL=0.01	0.003	ND -0.01	ND	By-product of drinking water chloramination; industrial processes
pH	Units	NA	NA	7.9-8.0	7.9	
Potassium	ppm	NA	NA	4.2-5.0	4.7	
Sodium	ppm	NA	NA	78-100	93	
Total Organic Carbon (TOC)	ppm	TT	NA	1.8-2.3	2.2	Various natural and man-made sources

ABBREVIATIONS AND FOOTNOTES

A = Absence
AI = Aggressive Index
AL = Action Level: the concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow
CFU/mL = Colony-forming units per milliliter
DBP = Disinfection Byproducts
HPC = Heterotrophic Plate Count
MCL = Maximum Contaminant Level
MCLG = Maximum Contaminant Level Goal
MRDL = Maximum Residual Disinfectant Level
MRDLG = Maximum Residual Disinfectant Level Goal
N = Nitrogen
NA = Not Applicable
ND = Non Detectable
NL = Notification Level
NTU = Nephelometric Turbidity Units is a measure of the suspended material in water
P = Presence
pCi/L = Pico Curies per liter (a measure of radiation)
PHG = Public Health Goal
ppb = Parts per Billion
ppm = Parts per Million
ppt = Parts per Trillion
SI = Saturation Index
TOC = Total Organic Carbon
TT = Treatment Technique: a required process intended to reduce the level of a contaminant in drinking water
µS/cm = Micromhos per centimeter

- (a) Data shown are annual averages and ranges.
- (b) The turbidity level of the filtered water shall be less than or equal to 0.3 NTU in 95% of the measurements taken each month and shall not exceed 1.0 NTU at any time. Turbidity is a measure of the cloudiness of the water and is an indicator of treatment performance.
- (c) Total coliform MCLs: No more than 5.0% of the monthly samples may be total coliform positive. When collecting <40 samples, if two or more are total coliform positive, the MCL is violated. The MCL was not violated.

E. coli MCLs: The occurrence of 2 consecutive total coliform positive samples, one of which contains fecal coliform/E. coli, constitutes an acute violation. Standards and results are based on distribution system monthly sampling averages. Compliance is based on distribution system sampling from all pressure zones. 416 samples were analyzed in 2009. The MCL was not violated.
- (d) Calculated from the average of quarterly samples. Compliance is based on a running annual average of 16 distribution system samples. VCMWD was in compliance with the Stage 1 Disinfection By-Products (D/DBP) Rule.
- (e) Calculated from the average quarterly samples. Compliance is based on a running annual average of 40 distribution system samples. VCMWD was in compliance with the Stage 1 Disinfection By-Products (D/DBP) Rule.
- (f) Lead and copper are regulated in a Treatment Technique under the Lead and Copper Rule. The lead and copper results for 2007 are from 30 water samples collected from the consumers' tap throughout the VCMWD distribution system. The federal action level, which triggers water systems into taking treatment steps if exceeded in more than 10% of the tap water samples, is 1.3 ppm for copper and 15 ppb for lead.
- (g) Positive SI index = non-corrosive; tendency to precipitate and/or deposit scale on pipes. Negative SI index = corrosive; tendency to dissolve calcium carbonate.

- (h) Results are from VCMWD's contracted laboratory's flavor-profile analysis that detects odor occurrences more accurately.
- (i) In 2009, all distribution samples collected had detectable total chlorine residuals and no HPC was required. HPC reporting level is 1 CFU/mL.
- (j) Perchlorate reporting level is 2 ppb.
- (k) State MCL is 45 ppm as nitrate, which equals 10 ppm as (N).
- (l) In 2009, the five (5) treatment plant effluents had no detectable Cryptosporidium and Giardia.
- (m) MTBE reporting level is 0.5 ppb.
- (n) Chromium VI reporting level is 0.03 ppb.
- (o) The gross beta particle activity MCL is 4 millirem/year annual dose equivalent to the total body or any internal organ. The screening level is 50 pCi/L.
- (p) AI <10.0 = highly aggressive and very corrosive water.
AI >12.0 = Non-aggressive water.
AI (10.0 – 11.9) = Moderately aggressive water.
- (q) Metropolitan was in compliance with all provisions of the State's Fluoridation System Requirements. For additional information, visit the Health Department's fluoridation website: www.cdph.ca.gov/certtic/drinkingwater/Pages/Fluoridation.aspx.
- (r) Analysis conducted by Metropolitan water Quality Laboratory using Standard Methods 6450B.
- (s) There is no range or average for total coliform sample results. VCMWD had no coliform present samples in 2009. Samples are collected on Mondays, and the number collected per month is either 32 or 40.

2009 Water Quality Data - Valley Center Municipal Water District

Our water quality information for 2009 is listed in the tables on this page. Contained in the table are the test results for clarity and microbiological safety. Also included are results for 16 semi-volatile, inorganic, and secondary standards (aesthetic). Finally, the table includes results for 14 “other parameters” for which there are no current state or federal standards.

What do all the abbreviations mean?

A number of abbreviations are contained on the Water Quality table which are important to your understanding of the data, and those are:

Maximum Contaminant Level or MCL: The highest level of a contaminant that is allowed in drinking water. Primary MCLs are set as close to the PHGs (or MCLGs) as is economically and technologically feasible. Secondary MCLs are set to protect the odor, taste, and appearance of drinking water.

Maximum Contaminant Level Goal or MCLG: The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs are set by the U.S. Environmental Protection Agency.

Maximum Residual Disinfection Level or MRDL.

Maximum Residual Disinfection Level Goal or MRDLG.

Public Health Goal or PHG: The level of a contaminant in drinking water below which there is no known or expected risk to health. PHGs are set by the California Environmental Protection Agency.

Primary Drinking Water Standard or PDWS: MCLs for contaminants that affect health along with their monitoring and reporting requirements, and water treatment requirements.

Secondary Drinking Water Standards (SDWS): MCLs for contaminants that affect taste, odor, or appearance of the drinking water. Contaminants with SDWS do not affect the health at the MCL levels.

Regulatory Action Level (AL): The concentration of contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

Important! 2009 Water Quality Report

If appropriate, please post this report so that others may review its contents. Additional copies may be obtained by contacting the District at (760) 749-1600.

Appendix D

2009-2010 BMP Activity Reports

The fields in red are required.

Primary contact:



Agency name: Valley Center Municipal Water District

First name: Patricia

Reporting unit name

(District name) Valley Center Municipal Water District

Last name: Garcia

Reporting unit number: 232

Email: pgarcia@vcmwd.org

You must enter the reporting unit number that we have on record for your agency. Click here to open a table to obtain this number.

Base Year Data

[Link to FAQs](#)

Reporting Unit Base Year

Base Year 2009

What is your reporting period? Fiscal

BMP 1.3 Metering

Number of unmetered accounts in Base Year 0

BMP 3.1 & BMP 3.2 & BMP 3.3 Residential Programs

Number of Single Family Customers in Base Year 7,752

Number of Multi Family Units in Base Year 126

BMP 3.4 WaterSense Specification (WSS) Toilets

Number of Single Family Housing Units constructed prior to 1992 3,822

Number of Multi Family Units prior to 1992 78

Average number of toilets per single family household 2.125

Average number of toilets per multi family household 1.35

Five year average resale rate of single family households 419,379

Five-year average resale rate of multi family households 552,500

Average number of persons per single family household 2.88

Average number of persons per multi family household 1.83

BMP 4.0 & BMP 5.0 CII & Landscape

Total water use (in Acre Feet) by CII accounts 741

Number of accounts with dedicated irrigation meters 0

Number of CII accounts without meters or with Mixed Use Meters 0

Number of CII accounts 168

Comments:

The fields in red are required.



Agency name: Valley Center Municipal Water District

Division name (Reporting unit): Valley Center Municipal Water District

Reporting unit number: 232

Primary contact:

First name: Patricia

Last name: Garcia

Email: pgarcia@vcmwd.org

WATER SOURCES

Service Area Population: 25,665

Potable Water

Own Supply Source Name	AF/YEAR	Water Supply Type	Water Supply Description
		Other	
		Other	
		Other	
		Other	
		Other	
		Other	
		Other	
		Other	
		Other	
		Other	
		Other	
		Other	
		Other	

Imported Supply Source Name	AF/YEAR	Water Supply Type	Water Supply Description
San Diego County Water Authority	34,781.00	Other	Imported Potable Water
		Other	
		Other	
		Other	
		Other	
		Other	
		Other	
		Other	
		Other	
		Other	
		Other	
		Other	
		Other	
		Other	

Exported Water Name	AF/YEAR	Where Exported?

2009

The fields in red are required.

Primary contact:



Agency name: Valley Center Municipal Water Dist

First name: Patricia

Division name (Reporting unit): Valley Center Municipal Water Dist

Last name: Garcia

Reporting unit number: 232

Email: pgarcia@vcmwd.org

Service Area Population: 25,665

Non- Potable Water

If you select Other for type, enter

Own Supply Source Name	AF/YEAR	Water Supply Type	Water Supply Description
Woods Valley WRF	44.70	Recycled Non Potable	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	

Imported Supply Source Name	AF/YEAR	Water Supply Type	Water Supply Description
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	

Exported Water Name	AF/YEAR	Where Exported? such as groundwater recharge, retail,

2009

The fields in red are required.

Primary contact:

Agency name: Valley Center Municipal Water District

First name: Patricia

Division name
(Reporting unit) **Valley Center Municipal Water Dis**

Last name: Garcia

Reporting unit number: 232

Email: pgarcia@vcmwd.org



Water Uses

2009

None
N/A

Non-Potable Billed

[illegible]

Non-Potable Un-Billed

[illegible]

The fields in red are required.



Agency name: Valley Center Municipal Water District

Reporting unit name

(District name) Valley Center Municipal Water District

Reporting unit number: 232

Primary contact:

First name: Patricia

Last name: Garcia

Email: pgarcia@vcmwd.org

You must enter the reporting unit number that we have on record for your agency. Click here to open a table to obtain this number.

[Link to FAQs](#)

[See the complete MOU:](#) [View MOU](#)

[See the coverage requirements for this BMP:](#)

2009

BMP 1.1 Operations Practices

Comments:

Conservation Coordinator

Conservation Coordinator ☒ Yes ☐ No

Contact Information

First Name: Patricia

Last Name: Garcia

Title: Engineering Services/Conservation

Phone: 760-735-4562

Email: pgarcia@vcmwd.org

Note that the contact information may be the same as the primary contact information at the top of the page. If this is your case, excuse the inconvenience but please enter the information again.

Water Waste Prevention

Water Agency shall do one or more of the following:

- Enact and enforce an ordinance or establish terms of service that prohibit water waste
- Enact and enforce an ordinance or establish terms of service for water efficient design in new development
- Support legislation or regulations that prohibit water waste
- Enact an ordinance or establish terms of service to facilitate implementation of water shortage response measures
- Support local ordinances that prohibit water waste
- Support local ordinances that establish permits requirements for water efficient design in new

To document this BMP, provide the following:

- A description of, or electronic link to, any ordinances or terms of service
- A description of, or electronic link to, any ordinances or requirements adopted by local jurisdictions or regulatory agencies with the water agency's service area.
- A description of any water agency efforts to cooperate with other entities in the adoption or enforcement of local requirement
- description of agency support positions with respect to adoption of legislation or regulations

You can show your documentation by providing files, links (web addresses), and/or entering a description.

File name(s): Email files to natalie@cuwcc.org

Web address(s) URL: comma-separated list

<http://www.valleycenterwater.org/en/Documents/Administrative%20Regulations/Water%20Supply%20Sh>

Enter a description:

Also Emergency Management Plan, accessible here:
<http://www.valleycenterwater.org/en/Documents/Administrative%20Regulations/Emergency%20Water%20Management%20Plan.aspx>

The fields in red are required.



Agency name: Valley Center Municipal Water District

Reporting unit name
(District name) Valley Center Municipal Water District

Reporting unit number: 232

Primary contact:

First name: Patricia

Last name: Garcia

Email: pgarcia@vcmwd.org

You must enter the reporting unit number that we have on record for your agency. Click here to open a table to obtain this number.

[Link to FAQs](#)

[View MOU](#)

2009 BMP 1.2 Water Loss Control

Did your agency complete a pre-screening system audit in 2009? Yes ☒ No ☐

If yes, answer the following:

Determine metered sales in AF: 32,762.90

Definition: other accountable uses not included in metered sales, such as unbilled water use, fire suppression, etc.

Determine system verifiable uses AF: 251.20

Determine total supply into the system in AF: 34,848.00

Does your agency keep necessary data on file to verify the answers above? Yes ☒ No ☐

Did your agency complete a full-scale system water audit during 2009? Yes ☐ No ☒

Does your agency maintain in-house records of audit results or the completed AWWA worksheet for the completed audit which could be forwarded to CUWCC? Yes ☐ No ☒

Did your agency operate a system leak detection program? Yes ☒ No ☐

Comments:

The fields in red are required.

Agency name: Valley Center Municipal Water District

Reporting unit name

(District name) Valley Center Municipal Water District

Reporting unit number: 232

Primary contact:

First name: Patricia

Last name: Garcia

Email: pgarcia@vcmwd.org

You must enter the reporting unit number that we have on record for your agency. Click here to open a table to obtain this number.



BMP 1.3 Metering with Commodity

[Link to FAQs](#)

[See the complete MOU: View MOU](#)

[See the coverage requirements for this BMP:](#)

Implementation

Does your agency have any unmetered service connections?

☐ Yes ☒ No

If YES, has your agency completed a meter retrofit plan?

☐ Yes ☒ No

Enter the number of previously unmetered accounts fitted with meters during reporting year:

Are all new service connections being metered?

☒ Yes ☐ No

Are all new service connections being billed volumetrically?

☒ Yes ☐ No

Has your agency completed and submitted electronically to the Council a written plan, policy or program to test, repair and replace meters?

☒ Yes ☐ No

Please Fill Out The Following Matrix

Account Type	# Metered Accounts	# Metered Accounts Read	# Metered Accounts Billed by Volume	Billing Frequency Per Year	# of estimated bills/yr
Single-Family	7,752	7,752	7,752	Monthly	93,024
Multi-Family	126	126	126	Monthly	1,512
Commercial	117	117	117	Monthly	1,404
Institutional	51	51	51	Monthly	612
Agricultural	1,615	1,615	1,615	Monthly	19,380
Other	41	41	41	Monthly	492
Other				Other	
Other				Other	
Other				Other	
Other				Other	

Number of CII Accounts with Mixed-use Meters

Number of CII Accounts with Mixed-use Meters Retrofitted with Dedicated Irrigation Meters during Reporting Period

0

Feasibility Study

Has your agency conducted a feasibility study to assess the merits of a program to provide incentives to switch mixed-use accounts to dedicated landscape meters?

☐ Yes ☒ No

If YES, please fill in the following information:

A. When was the Feasibility Study conducted

B. Email or provide a link to the feasibility study (or description of):

File name(s): Email files to natalie@cuwcc.org

Enter the file name here e.g. WaterWastePreventionOrdinance

Web address(s) URL: comma-separated list

Enter the URL to your documentation.

General Comments about BMP 1.3:

"Other" Account Type indicated above is Potable Construction water

The fields in red are required.

Primary contact:

Agency name: Valley Center Municipal Water District

First name: Patricia

Reporting unit name

(District name) Valley Center Municipal Water District

Last name: Garcia

Reporting unit number: 232

Email: pgarcia@vcnwd.org

You must enter the reporting unit number that we have on record for your agency. Click here to open a table to obtain this number.



2009

BMP 1.4 Retail Conservation Pricing

[Link to FAQs](#)

[View MOU](#)

If you are reporting more rate structures than this form allows, add the structures to a spreadsheet and send the file to natalie@cuwcc.org.

Implementation (Water Rate Structure)

Enter the Water Rate Structures that are assigned to the majority of your customers, by customer class

Rate Structure	Customer Class	Total Revenue Commodity Charges	Total Revenue Customer Meter/Service (Fixed Charges)
Uniform	Single-Family	7,946,473.00	2,159,013.00
Uniform	Multi-Family	507,328.00	74,309.00
Uniform	Commercial	559,952.00	52,184.00
Uniform	Institutional	217,527.00	23,601.00
Uniform	Other	58,715.00	22,971.00
Uniform	Other	31,638.00	1,287.00
Select a Rate Struc	Other		

Implementation Option (Conservation Pricing Option)

- ☒ Use Annual Revenue As Reported
☐ Use Canadian Water & Wastewater Association Rate Design Model

If CWWA is select, enter the file name and email the spreadsheet to natalie@cuwcc.org

Retail Waste Water (Sewer) Rate Structure by Customer Class

Agency Provide Sewer Service

☒ Yes ☐ No

Select the Retail Waste Water(Sewer) Rate Structure assigned to the majority of your customers within a specific customer class.

Rate Structure	Customer Class	Total Revenue Commodity Charges	Total Revenue Customer Meter/Service (Fixed Charges)
Uniform	Single-Family	589,079.00	0.00
Uniform	Multi-Family	583,513.00	0.00
Uniform	Commercial	43,862.00	0.00
Uniform	Institutional	486.00	0.00
Select a Rate Struc	Select a Customer Ty		
Select a Rate Struc	Select a Customer Ty		
Select a Rate Struc	Select a Customer Ty		

Comments:



Click here to open a table that displays your agency name reporting unit name and reporting unit number. Please ensure that you enter the correct information.

[View MOU](#)

2009

BMP 2.1 Public Outreach - Retail Reporting

☒ Yes ☐ No

San Diego County Water Authority; and the Metropolitan Water District of Southern California

Report a minimum of 4 water conservation related contacts your agency had with the public during the year.

Did at least one contact take place during each quarter of the reporting year? ☒

Number of Public Contacts	Public Information Programs
10,500	Newsletter articles on conservation
20,600	Flyers and/or brochures (total copies), bill stuffers, messages printed on bill, information packets
200	General water conservation information
6	Website
	Landscape water conservation media campaigns

☒ Yes ☐ No

**San Diego County Water Authority; and the
Metropolitan Water District of Southern California**

Did at least one contact take place during each quarter of the reporting year?

[illegible]

Is a Wholesale Agency Performing Website Updates?

Did one or more CUWCC wholesale agencies agree to assume your agency's responsibility for meeting the requirements of and for CUWCC reporting of this BMP? ☐ Yes ☒ No

Enter the name(s) of the wholesale agency (comma delimited)

Is Your Agency Performing Website Updates?

Enter your agency's URL (website address):

<http://www.valleycenterwater.org/>

Describe a minimum of four water conservation related updates to your agency's website that took place during the year:

Updates made periodically to reflect changes in programs status, i.e. rebate programs
Added to website link to 20 Gallon Challenge contest
Provided current data on water supply status/outlook and water conservation mandates
Provided and maintained water conservation tips, and links for consumer conservation information

Did at least one Website Update take place during each quarter of the reporting year? ☐ Yes ☒ No

Public Outreach Annual Budget

Enter budget for public outreach programs. You may enter total budget in a single line or break the budget into discrete categories by entering many rows. Please indicate if personnel costs are included in the entry.

Category	Amount	Personnel Costs Included? <small>If yes, check the box.</small>	Comments
Conservation	\$18,500	<input checked="" type="checkbox"/>	Class booklets, conservation flyers and broch
		<input type="checkbox"/>	
		<input type="checkbox"/>	
		<input type="checkbox"/>	
		<input type="checkbox"/>	
		<input type="checkbox"/>	

Comments:

California Friendly Residential Landscape Class booklet and various conservation flyers and brochures were purchased for distribution and newsletters printed for

The fields in red are required.



Agency name: Valley Center Municipal Water District

Reporting unit name

(District name) Valley Center Municipal Water District

Reporting unit number: 232

Primary contact:

First name: Patricia

Last name: Garcia

Email: pgarcia@vcmwd.org

Click here to open a table that displays your agency name reporting unit name and reporting unit number. Please ensure that you enter the correct information.

[Link to FAQs](#)

[View MOU](#)

2009

BMP 2.1 Public Outreach Cont'd

Public Outreach Expenses

Enter expenses for public outreach programs. Please include the same kind of expenses you included in the question related to your budget (Section 2.1.7, above). For example, if you included personnel costs in the budget entered above, be sure to include them here as well.

Expense Category	Expense Amount	Personnel Costs Included?
Conservation	\$18,500	<input checked="" type="checkbox"/> If yes, check the check box.
		<input type="checkbox"/>
		<input type="checkbox"/>
		<input type="checkbox"/>

Additional Public Information Program

Please report additional public information contacts. List these additional contacts in order of how your agency views their importance / effectiveness with respect to conserving water, with the most important/ effective listed first (where 1 = most important).

Were there additional Public Outreach efforts?

☒ Yes ☐ No

Public Outreach Additional Information

Public Information Programs	Importance
Presentations to civic organizations such as the local Rotary Association; Optimist Club	\$2
Presentations to community organizations such as Board of Realtors; Chamber of Commerce	\$1
Participation in HOA events to address water issues and questions	\$3

Social Marketing Programs

Branding

Does your agency have a water conservation "brand," "theme" or mascot? ☐ Yes ☒ No

Describe the brand, theme or mascot.

Market Research

Have you sponsored or participated in market research to refine your message? ☐ Yes ☒ No

Market Research Topic

Brand Message

Brand Mission Statement

Community Committees

Do you have a community conservation committee?

☐ Yes ☒ No

Enter the names of the community committees:

Training

Training Type	# of Trainings	# of Attendees	Description of Other
California Landscapes	\$4	\$240	

Social Marketing Expenditures

Public Outreach Social Marketing Expenses

Expense Category	Expense Amount	Description

Partnering Programs - Partners

Name

Type of Program

☐ CLCA?

☐ Green Building Programs?

☐ Master Gardeners?

☐ Cooperative Extension?

☐ Local Colleges?

☐ Other

☐ Retail and wholesale outlet; name(s) and type(s) of programs:

Partnering Programs - Newsletters

Number of newsletters per year

Number of customers per year

Partnering with Other Utilities

Describe other utilities your agency partners with, including electrical utilities

Metropolitan Water District of Southern California; San Diego County Water Authority and San Diego Gas & Electric Company through the San Diego County Water Authority

Conservation Gardens

Describe water conservation gardens at your agency or other high traffic areas or new

Water Conservation Garden at Cuyamaca College and the San Diego Botanical Garden

Landscape contests or awards

Describe water wise landscape contest or awards program conducted by your agency

Comments:

Please note: I am unable to remove the dollar (\$) symbol from the above number fields in this worksheet

The fields in red are required.



Agency name: Valley Center Municipal Water District

Reporting unit name

(District name) Valley Center Municipal Water District

Reporting unit number: 232

Primary contact:

First name: Patricia

Last name: Garcia

Email: pgarcia@vcmwd.org

Click here to open a table that displays your agency name reporting unit name and reporting unit number. Please ensure that you enter the correct information.

[Link to FAQs](#)

[View MOU](#)

2009

BMP 2.2 School Education Programs, Retail Agencies School Programs

Is a wholesale agency implementing school programs which can be counted to help your agency comply with this BMP?

☒ Yes ☐ No

Enter Wholesaler Names, separated by commas:

San Diego County Water Authority; Metropolitan Water District of Southern California

☒ Materials meet state education framework requirements?

Description of Materials

Literature and brochures on water conservation, efficient landscapes (retrofit and new landscapes) as well as brochures promoting water conservation programs are free to customers and are readily available

☒ Materials distributed to K-6 Students?

Description of materials distributed to K-6 Students

Hands on curriculums for teachers; age appropriate materials including coloring books and activity books

Number of students reached

700

☐ Materials distributed to 7-12 Students?

Description of materials distributed to 7-12 Students

Number of Distribution

Annual budget for school education program

\$6,000.00

Description of all other water supplier education programs

The San Diego County Water Authority implemented water education providing teacher education, traveling library, Splash mobile laab, the Green Machine; science fair awards and water testing kits; 4th Grade Calendar Poster Contest;

School Program Activities

Classroom presentations:

Number of presentations

10

Number of attendees

200

Large group assemblies:

Number of presentations

3

Number of attendees

360

Children's water festivals or other events:

Number of presentations

32

Number of attendees

700

Cooperative efforts with existing science/water education programs (various workshops, science fair awards or judging) and follow-up:

Number of presentations

N/A

Number of attendees

N/A

Other methods of disseminating information (i.e. themed age-appropriate classroom loaner kits):

Description		School Fair	
Number distributed	700		
Staffing children's booths at events & festivals:			
Number of booths	N/A		Number of attendees
Water conservation contests such as poster and photo:			
Description		4th Grade Calendar Poster Contest	
Number distributed	265		
Offer monetary awards/funding or scholarships to students:			
Number Offered	3	Total Funding	155.00
Teacher training workshops:			
Number of presentations	N/A	Number of attendees	
Fund and/or staff student field trips to treatment facilities, recycling facilities, water conservation gardens, etc.:			
Number of tours or field trips	N/A	Number of participants	
College internships in water conservation offered:			
Number of internships	N/A	Total funding	
Career fairs/workshops:			
Number of presentations	N/A	Number of attendees	
Additional program(s) supported by agency but not mentioned above:			
Description		Water Day at Agua Hedionda Lagoon	
Number of events (if applicable)	1	Number of participants	400
Total reporting period budget expenditures for school education programs (include all agency costs):			2,940.00

Comments

The fields in red are required.

Primary contact:

Agency name:

Valley Center Municipal Water District

First name: **Patricia**

Division name
(Reporting unit)

Valley Center Municipal Water Dis+

Last name: **Garcia**

Reporting unit number: 232

Email: pgarcia@vcmwd.org



Water Uses 2010

Non-Potable Billed

[illegible]

Non-Potable Un-Billed

[illegible]

The fields in red are required.



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Reporting unit name

(District name) Valley Center Municipal Water District

Reporting unit number:

232

Primary contact:

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Email: pgarcia@vcmwd.org

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[Link to FAQs](#)

[See the complete MOU:](#) [View MOU](#)

[See the coverage requirements for this BMP:](#)

2010

BMP 1.1 Operations Practices

Comments:

Conservation Coordinator

Conservation Coordinator ☒ Yes ☐ No

Contact Information

First Name Patricia

Last Name Garcia

Title Engineering Services/Conservation

Phone 760-735-4562

Email pgarcia@vcmwd.org

Note that the contact information may be the same as the primary contact information at the top of the page. If this is your case, excuse the inconvenience but please enter the information again.

Water Waste Prevention

Water Agency shall do one or more of the following:

- Enact and enforce an ordinance or establish terms of service that prohibit water waste
- Enact and enforce an ordinance or establish terms of service for water efficient design in new development
- Support legislation or regulations that prohibit water waste
- Enact an ordinance or establish terms of service to facilitate implementation of water shortage response measures
- Support local ordinances that prohibit water waste
- Support local ordinances that establish permits requirements for water efficient design in new

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- A description of, or electronic link to, any ordinances or terms of service
- A description of, or electronic link to, any ordinances or requirements adopted by local jurisdictions or regulatory agencies with the water agency's service area.
- A description of any water agency efforts to cooperate with other entities in the adoption or enforcement of local requirement
- description of agency support positions with respect to adoption of legislation or regulations

You can show your documentation by providing files, links (web addresses), and/or entering a description.

File name(s): Email files to natalie@cuwcc.org

Web address(s) URL: comma-separated list

<http://www.valleycenterwater.org/en/Documents/Administrative%20Regulations/Water%20Supply%20Sh>

Enter a description:

Also Emergency Management Plan, accessible here:
<http://www.valleycenterwater.org/en/Documents/Administrative%20Regulations/Emergency%20Water%20Management%20Plan.aspx>

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Email: pgarcia@vcuwd.org

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[Link to FAQs](#)

[View MOU](#)

2010 BMP 1.2 Water Loss Control

AWWA Water Audit

Agency to complete a Water Audit & Balance Using The AWWA Software ☒ Yes ☐ No
Email to natalie@cuwcc.org - Worksheets (AWWA Water Audit). Enter the name of the file below:

2010_BMP1.2_AWWA_WaterLossVersion4.1.xls

Water Audit Validity Score
from AWWA spreadsheet 95

Agency Completed Training In The AWWA Water Audit Method ☐ Yes ☒ No

Agency Completed Training In The Component Analysis Process ☐ Yes ☒ No

Completed/Updated the Component Analysis (at least every 4 years)? ☐ Yes ☒ No

Component Analysis Completed/Updated Date *Please see comment section below

Water Loss Performance

Agency Repaired All Reported Leaks & Breaks To The Extent Cost Effective ☒ Yes ☐ No

Recording Keeping Requirements:

Date/Time Leak Reported	Leak Location
Type of Leaking Pipe Segment or Fitting	Leak Running Time From Report to Repair
Leak Volume Estimate	Cost of Repair

Agency Located and Repaired Unreported Leaks to the Extent Cost Effective ☒ Yes ☐ No

Type of Program Activities Used to Detect Unreported Leaks

Leak detection monitoring; Sounding; System monitoring; Reservoir levels activity

Annual Summary Information

Complete the following table with annual summary information (required for reporting years 2-5 only)

Total Leaks Repaired	Economic Value Of Real Loss	Economic Value Of Apparent Loss	Miles Of System Surveyed For Leaks	Pressure Reduction Undertaken for loss reduction	Cost Of Interventions	Water Saved (AF/Year)
40			338		\$0.00	

Comments:

*The AWWA Water Audit Method and Component Analysis Process training to be completed by staff by 2012
*Component Analysis to be completed by 2012
DRAFT AWWA Worksheet; final to be submitted after internal review

AWWA WLCC Free Water Audit Software: Reporting Worksheet

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WAS v4.1

[Back to Instructions](#)

[Click to access definition](#)

Water Audit Report for: **Valley Center Municipal Water District**

Reporting Year: **2010** 7/2009 - 6/2010

Please enter data in the white cells below. Where available, metered values should be used; if metered values are unavailable please estimate a value. Indicate your confidence in the accuracy of the input data by grading each component (1-10) using the drop-down list to the left of the input cell. Hover the mouse over the cell to obtain a description of the grades

All volumes to be entered as: ACRE-Feet PER YEAR

WATER SUPPLIED

<< Enter grading in column 'E'

Volume from own sources:	?	10	n/a		acre-ft/yr
Master meter error adjustment (enter positive value):	?	10	n/a		acre-ft/yr
Water imported:	?	10	29,522.400		acre-ft/yr
Water exported:	?	10	0.000		acre-ft/yr
WATER SUPPLIED:			29,522.400		acre-ft/yr

AUTHORIZED CONSUMPTION

Billed metered:	?	10	27,589.600		acre-ft/yr
Billed unmetered:	?	n/a	0.000		acre-ft/yr
Unbilled metered:	?	10	127.600		acre-ft/yr
Unbilled unmetered:	?		369.030		acre-ft/yr

Default option selected for Unbilled unmetered - a grading of 5 is applied but not displayed

AUTHORIZED CONSUMPTION: 28,086.230 acre-ft/yr

Click here: [?](#) for help using option buttons below

Pcnt: 1.25% Value:

Use buttons to select percentage of water supplied OR value

WATER LOSSES (Water Supplied - Authorized Consumption)

1,436.170 acre-ft/yr

Apparent Losses

Unauthorized consumption: 73.806 acre-ft/yr

Default option selected for unauthorized consumption - a grading of 5 is applied but not displayed

Customer metering inaccuracies:	?	10	139.282		acre-ft/yr
Systematic data handling errors:	?	8	1.000		acre-ft/yr

Apparent Losses: 214.088

Pcnt: 0.25% Value:

0.50% Value:

Choose this option to enter a percentage of billed metered consumption. This is NOT a default value

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: 1,222.082 acre-ft/yr

WATER LOSSES: 1,436.170 acre-ft/yr

NON-REVENUE WATER

NON-REVENUE WATER: 1,932.800 acre-ft/yr

= Total Water Loss + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	?	10	338.0		miles
Number of active AND inactive service connections:	?	10	10,576		
Connection density:	?		31		conn./mile main
Average length of customer service line:	?	10	0.0		ft (pipe length between curbstop and customer meter or property boundary)
Average operating pressure:	?	10	120.0		psi

COST DATA

Total annual cost of operating water system:	?	10	\$6,022,023		\$/Year
Customer retail unit cost (applied to Apparent Losses):	?	9	\$2.87		\$/100 cubic feet (ccf)
Variable production cost (applied to Real Losses):	?	10	\$814.00		\$/acre-ft/yr

PERFORMANCE INDICATORS

Financial Indicators

Non-revenue water as percent by volume of Water Supplied:	6.5%
Non-revenue water as percent by cost of operating system:	27.7%
Annual cost of Apparent Losses:	\$267,769
Annual cost of Real Losses:	\$994,774

Operational Efficiency Indicators

Apparent Losses per service connection per day:	18.07	gallons/connection/day
Real Losses per service connection per day*:	N/A	gallons/connection/day
Real Losses per length of main per day*:	3,227.82	gallons/mile/day
Real Losses per service connection per day per psi pressure:		gallons/connection/day/psi
Unavoidable Annual Real Losses (UARL):	149.58	million gallons/year
From Above, Real Losses = Current Annual Real Losses (CARL):	1,222.08	million gallons/year
Infrastructure Leakage Index (ILI) (CARL/UARL):	2.66	

* only the most applicable of these two indicators will be calculated

WATER AUDIT DATA VALIDITY SCORE:

*** YOUR SCORE IS: 95 out of 100 ***

A weighted scale for the components of consumption and water loss is included in the calculation of the Water Audit Data Validity Score

PRIORITY AREAS FOR ATTENTION:

Based on the information provided, audit accuracy can be improved by addressing the following components:

- 1: Unauthorized consumption
- 2: Systematic data handling errors
- 3: Customer retail unit cost (applied to Apparent Losses)

For more information, click here to see the Grading Matrix worksheet

The fields in red are required.

Agency name: Valley Center Municipal Water District

Reporting unit name

(District name) Valley Center Municipal Water District

Reporting unit number: 232

Primary contact:

First name: Patricia

Last name: Garcia

Email: pgarcia@vcnwd.org

You must enter the reporting unit number that we have on record for your agency. Click here to open a table to obtain this number.



BMP 1.3 Metering with Commodity 2010

[Link to FAQs](#)

[See the complete MOU: View MOU](#)

[See the coverage requirements for this BMP:](#)

Implementation

Does your agency have any unmetered service connections?

☐ Yes ☒ No

If YES, has your agency completed a meter retrofit plan?

☐ Yes ☒ No

Enter the number of previously unmetered accounts fitted with meters during reporting year:

Are all new service connections being metered?

☒ Yes ☐ No

Are all new service connections being billed volumetrically?

☒ Yes ☐ No

Has your agency completed and submitted electronically to the Council a written plan, policy or program to test, repair and replace meters?

☒ Yes ☐ No

Please Fill Out The Following Matrix

Account Type	# Metered Accounts	# Metered Accounts Read	# Metered Accounts Billed by Volume	Billing Frequency Per Year	# of estimated bills/yr
Single-Family	7,802	7,802	7,802	Monthly	93,624
Multi-Family	126	126	126	Monthly	1,512
Commercial	117	117	117	Monthly	1,404
Institutional	41	41	41	Monthly	492
Agricultural	1,546	1,546	1,546	Monthly	18,552
Other	1	1	1	Monthly	12
Other	57	57	57	Monthly	684
Other				Other	
Other				Other	
Other				Other	

Number of CII Accounts with Mixed-use Meters

0

Number of CII Accounts with Mixed-use Meters Retrofitted with Dedicated Irrigation Meters during Reporting Period

0

Feasibility Study

Has your agency conducted a feasibility study to assess the merits of a program to provide incentives to switch mixed-use accounts to dedicated landscape meters?

☐ Yes ☒ No

If YES, please fill in the following information:

A. When was the Feasibility Study conducted

B. Describe, upload or provide an electronic link to the Feasibility Study Upload File

File name(s): Email files to natalie@cuwcc.org

Web address(s) URL: comma-separated list

Comments:

"Other" Account Types indicated above are: Recycled Water (1) and Potable Construction

The fields in red are required.

Primary contact:

You must enter the reporting unit number that we have on record for your agency. Click here to open a table to obtain this number.

Agency name: Valley Center Municipal Water District

First name: Patricia

Reporting unit name

(District name) Valley Center Municipal Water District

Last name: Garcia

Reporting unit number: 232

Email: pgarcia@vcwmwd.org



2010

BMP 1.4 Retail Conservation Pricing

[Link to FAQs](#)

[View MOU](#)

If you are reporting more rate structures than this form allows, add the structures to a spreadsheet and send the file to natalie@cuwcc.org.

Implementation (Water Rate Structure)

Enter the Water Rate Structures that are assigned to the majority of your customers, by customer class

Rate Structure	Customer Class	Total Revenue	Commodity Charges	Total Revenue Customer Meter/Service (Fixed Charges)
Uniform	Single-Family	7,263,082.00		2,226,909.00
Uniform	Multi-Family	554,525.00		76,175.00
Uniform	Commercial	358,600.00		50,197.00
Uniform	Institutional	168,028.00		23,135.00
Uniform	Other	28,524.00		5,148.00
Uniform	Other	39,081.00		1,008.00
Select a Rate Struc	Other			

Implementation Option (Conservation Pricing Option)

- ☒ Use Annual Revenue As Reported
☐ Use Canadian Water & Wastewater Association Rate Design Model

If CWWA is select, enter the file name and email the spreadsheet to natalie@cuwcc.org

Retail Waste Water (Sewer) Rate Structure by Customer Class

Agency Provide Sewer Service

☐ Yes ☐ No

Select the Retail Waste Water(Sewer) Rate Structure assigned to the majority of your customers within a specific customer class.

Rate Structure	Customer Class	Total Revenue	Commodity Charges	Total Revenue Customer Meter/Service (Fixed Charges)
Uniform	Single-Family	638,331.00		0.00
Uniform	Multi-Family	635,408.00		0.00
Uniform	Commercial	47,860.00		0.00
Uniform	Institutional	526.00		0.00
Uniform	Other	0.00		0.00
Uniform	Other	0.00		0.00
Select a Rate Struc	Other			

Comments:

"Other" includes recycled and reclaimed



232

Email: pgarcia@vcmwd.org

[View MOU](#)

2010

[illegible]

Is a Wholesale Agency Performing Website Updates?

Did one or more CUWCC wholesale agencies agree to assume your agency's responsibility for meeting the requirements of and for CUWCC reporting of this BMP? ☐ Yes ☐ No

Enter the name(s) of the wholesale agency (comma delimited)

Is Your Agency Performing Website Updates?

Enter your agency's URL (website address):

http://www.valleycenterwater.org/

Describe a minimum of four water conservation related updates to your agency's website that took place during the year:

Updates made periodically to reflect changes in programs status, i.e. rebate programs
Added to website link to 20 Gallon Challenge contest
Provided current data on water supply status/outlook and water conservation mandates
Provided and maintained water conservation tips, and links for consumer conservation information

Did at least one Website Update take place during each quarter of the reporting year? ☐ Yes ☐ No

Public Outreach Annual Budget

Enter budget for public outreach programs. You may enter total budget in a single line or break the budget into discrete categories by entering many rows. Please indicate if personnel costs are included in the entry.

Category	Amount	Personnel Costs Included? <small>If yes, check the box.</small>	Comments
Conservation	\$20,000	<input checked="" type="checkbox"/>	
		<input type="checkbox"/>	
		<input type="checkbox"/>	
		<input type="checkbox"/>	
		<input type="checkbox"/>	
		<input type="checkbox"/>	

Comments:

The fields in red are required.



Agency name: Valley Center Municipal Water District

Reporting unit name

(District name) Valley Center Municipal Water District

Reporting unit number: 232

Primary contact:

First name: Patricia

Last name: Garcia

Email: pgarcia@vcmwd.org

Click here to open a table that displays your agency name reporting unit name and reporting unit number. Please ensure that you enter the correct information.

[Link to FAQs](#)

[View MOU](#)

2010

BMP 2.2 School Education Programs, Retail Agencies School Programs

Is a wholesale agency implementing school programs which can be counted to help your agency comply with this BMP?

☒ Yes ☐ No

Enter Wholesaler Names, separated by commas:

San Diego County Water Authority; Metropolitan Water District of Southern California

☒ Materials meet state education framework requirements?

Description of Materials

Literature and brochures on water conservation, efficient landscapes (retrofit and new landscapes) as well as brochures promoting water conservation programs are free to customers and are readily available

☒ Materials distributed to K-6 Students?

Description of materials distributed to K-6 Students

Hands on curriculums for teachers; age appropriate materials including coloring books and activity books

Number of students reached

1,400

☐ Materials distributed to 7-12 Students?

Description of materials distributed to 7-12 Students

Number of Distribution

Annual budget for school education program

\$6,500.00

Description of all other water supplier education programs

The San Diego County Water Authority implemented water education providing teacher education, traveling library, Splash mobile laab, the Green Machine; science fair awards and water testing kits; 4th Grade Calendar Poster Contest;

School Program Activities

Classroom presentations:

Number of presentations

10

Number of attendees

250

Large group assemblies:

Number of presentations

3

Number of attendees

400

Children's water festivals or other events:

Number of presentations

32

Number of attendees

800

Cooperative efforts with existing science/water education programs (various workshops, science fair awards or judging) and follow-up:

Number of presentations

N/A

Number of attendees

N/A

Other methods of disseminating information (i.e. themed age-appropriate classroom loaner kits):

Description		School Fair Agruculture Day	
Number distributed	1,400		
Staffing children's booths at events & festivals:			
Number of booths	N/A		Number of attendees
Water conservation contests such as poster and photo:			
Description		4th Grade Calendar Poster Contest	
Number distributed	300		
Offer monetary awards/funding or scholarships to students:			
Number Offered	N/A		Total Funding
Teacher training workshops:			
Number of presentations	N/A		Number of attendees
Fund and/or staff student field trips to treatment facilities, recycling facilities, water conservation gardens, etc.:			
Number of tours or field trips	N/A		Number of participants
College internships in water conservation offered:			
Number of internships	N/A		Total funding
Career fairs/workshops:			
Number of presentations	N/A		Number of attendees
Additional program(s) supported by agency but not mentioned above:			
Description			
Number of events (if applicable)			Number of participants
Total reporting period budget expenditures for school education programs (include all agency costs):			6,000.00

Comments

Appendix E

VCMWD's Regulations and Codes

Article 230

Water Supply Shortage Response Program

Sec. 230.1 Declaration of Necessity and Intent

- (a) This article establishes water management requirements necessary to conserve water and enable effective water supply planning. It will assure reasonable and beneficial use of water, prevent waste of water, prevent unreasonable use of water, and prevent unreasonable method of use of water within the District. It will also balance water demands with available supplies and further the public health, safety, and welfare, recognizing that water is a scarce and limited natural resource that requires careful management not only in times of water supply shortage, but at all times.
- (b) This article establishes regulations to be implemented during times of declared water shortages, or declared water shortage emergencies. It establishes four levels of water supply shortage response actions to be implemented in times of shortage, with increasing restrictions on water use for the District's customers and the District itself, in response to worsening water supply conditions and decreasing available supplies.
- (c) Level 1 condition water supply shortage response measures are voluntary and will be reinforced through local and regional public education and awareness measures that may be funded in part by District. During water supply shortage response condition Levels 2 through 4, all conservation measures and water-use restrictions are mandatory and become increasingly restrictive in order to attain escalating conservation goals.
- (d) During a Water Supply Shortage Response Level 2 condition or higher, the water conservation measures and water use restrictions established by this ordinance are mandatory and violations are subject to criminal, civil, and administrative penalties and remedies specified in this ordinance and as provided in District Administrative or Municipal Code.

Sec. 230.2 Definitions

- (a) The following words and phrases whenever used in this chapter shall have the meaning defined in this section:
 - 1. "Construction Water" means water used for construction purposes, including, but not limited to grading, compaction, dust control, clean-up, and hydro-seeding, or other uses as determined by the General Manager.

Article 230 Water Supply Shortage Response Program (Cont'd.)

Sec. 230.2 Definitions (Cont'd.)

2. "Grower" refers to those with a minimum of one acre of land engaged in the growing or raising, in conformity with recognized practices of husbandry, for the purpose of commerce, trade, or industry, or for use by public, educational or correctional institutions, of agricultural, horticultural or floricultural products, and produced: (1) for the market, or (2) for the feeding of fowl or livestock produced for human consumption or for the market, or (3) for the feeding of fowl or livestock for the purpose of obtaining their products for the market. Provisions of this Article do not apply to customers who purchase water subject to the Metropolitan Interim Agricultural Water Program or the Water Authority Special Agricultural Rate programs.
3. "Metropolitan" means the Metropolitan Water District of Southern California.
4. "Person" means any natural person, corporation, public or private entity, public or private association, public or private agency, government agency or institution, educational institutions, or any other user of water provided by the District.
5. "Water Authority" means the San Diego County Water Authority.

Sec. 230.3 Application

- (a) The provisions of this ordinance apply to any person in the use of any water provided by the District.
- (b) This ordinance is intended solely to further the conservation of water. It is not intended to implement any provision of federal, State, or local statutes, ordinances, or regulations relating to protection of water quality or control of drainage or runoff. Refer to the local jurisdiction or Regional Water Quality Control Board for information on any storm water ordinances and storm water management plans.
- (c) Nothing in this ordinance is intended to affect or limit the ability of the District to declare and respond to an emergency, including an emergency that affects the ability of the District to supply water.
- (d) The provisions of this ordinance do not apply to use of water from private wells, surface sources or to reclaimed water.
- (e) Nothing in this ordinance shall apply to use of water that is subject to a special supply program, such as the Metropolitan Interim Agricultural Water Program or the Water Authority Special Agricultural Rate programs. Violations of the conditions of special supply programs are subject to the penalties established under the applicable program. A person using water subject to a special supply program and other water provided by the District is subject to this ordinance in the use of the other water.

Sec. 230.4 Water Supply Shortage Response Level 1 – Water Supply Shortage Watch Condition

- (a) A Water Supply Shortage Response Level 1 condition is also referred to as a “Water Supply Shortage Watch” condition. A Level 1 condition applies when the Water Authority notifies its member agencies that due to drought or other supply reductions, there is a reasonable probability there will be future supply shortages unless there is a voluntary consumer demand reduction of up to 10 percent in order to ensure that sufficient supplies will be available to meet anticipated regional demands. The General Manager shall declare the existence of a Water Supply Shortage Response Level 1 and take action to implement the Level 1 conservation practices identified in this ordinance.
- (b) During a Level 1 Water Supply Shortage Watch condition, District will increase its public education and outreach efforts to emphasize increased public awareness of the need to implement the following voluntary water conservation practices.
 - 1. Stop washing down paved surfaces, including but not limited to sidewalks, driveways, parking lots, tennis courts, or patios, except when it is necessary to alleviate safety or sanitation hazards.
 - 2. Stop water waste resulting from inefficient landscape irrigation, such as runoff, low head drainage, or overspray, etc. Similarly, stop water flows onto non-targeted areas, such as adjacent property, non-irrigated areas, hardscape, roadways, or structures.
 - 3. Irrigate residential and commercial landscape before 10:00 a.m. and after 4:00 p.m. only.
 - 4. Use a hand-held hose equipped with a positive shut-off nozzle or bucket to water landscaped areas, including trees and shrubs located on residential and commercial properties that are not irrigated by a landscape irrigation system.
 - 5. Irrigate nursery and commercial grower’s products before 10:00 a.m. and after 4:00 p.m. only. Watering is permitted at any time with a hand-held hose equipped with a positive shut-off nozzle, a bucket, or when a drip/micro-irrigation system/equipment is used. Irrigation of nursery propagation beds is permitted at any time. Watering of livestock is permitted at any time.
 - 6. Use re-circulated water to operate ornamental fountains.

Sec. 230.4 Water Supply Shortage Response Level 1 – Water Supply Shortage Watch Condition (Cont'd.)

(b) (Cont'd.)

7. Wash vehicles using a bucket and a hand-held hose with positive shut-off nozzle, mobile high pressure/low volume wash system, or at a commercial site that re-circulates (reclaims) water on-site. Avoid washing during hot conditions when additional water is required due to evaporation.
 8. Repair all water leaks within five (5) days of notification by the District unless other arrangements are made with the General Manager.
- (c) The District shall issue Project Facility Availability, Project Facility Commitment Letters and adopt Facility Concept Approvals with qualifications concerning the uncertainty of the future water supply availability and its impact on the ability of the District to provide actual water service in the future.

Sec. 230.5 Water Supply Shortage Response Level 2 – Water Supply Shortage Alert Condition

- (a) A Water Supply Shortage Response Level 2 condition is also referred to as a “Water Supply Shortage Alert” condition. A Level 2 condition applies when the Water Authority notifies its member agencies that due to an actual or anticipated reduction in supplies to the Water Authority, a commensurate consumer demand reduction of up to 20 percent is required in order to balance demands with supplies anticipated to be available for the foreseeable future. District’s Board of Directors shall declare a Water Shortage Emergency in the manner and on the grounds provided in California Water Code section 350 *et seq*, and such declaration shall remain in effect if water supply shortage conditions require the declaration of a subsequent Level 3, Water Supply Shortage Critical Condition and/or a Level 4, Water Supply Shortage, Water Emergency. With the declaration by the Board of Directors of a Water Supply Shortage Response Level 2 condition, the following mandatory Level 2 conservation measures identified in this ordinance shall be implemented.

Sec. 230.5 Water Supply Shortage Response Level 2 – Water Supply Shortage Alert Condition (Cont'd.)

- (b) All persons using District supplied water shall comply with Level 1 Water Supply Shortage Watch water conservation practices on a mandatory basis to achieve up to a 20% reduction in demand during a Level 2 Water Supply Shortage Alert and shall also comply with the following additional conservation measures:
 - 1 Repair all leaks within seventy-two (72) hours of notification by the District unless other arrangements are made with the General Manager.
 - 2 Use recycled or non-potable water for construction purposes when available and economically feasible as determined by the applicant for the temporary construction water account.
- (c) Upon declaration of a Water Supply Shortage Response, Level 2 condition, all non-Interim Agricultural Water Program (IAWP) and Special Agricultural Water Rate (SAWR) meters without pre-existing allocations shall be provided an allocation of 10 Hundred Cubic Feet (HCF) per equivalent $\frac{3}{4}$ inch meter, per month for months in the base period for which there is no usage history or a usage history of less than 10 HCF. Such allocation shall be subject to the appeal process provided for in Section 230.11 of this Article. Water allocations for meters in the IAWP and SAWR programs shall be based upon water supply reduction plans adopted by the Board for those specific programs.

Per Ordinance No. 2009-04 Adopted 6/15/09 [Sec. 230.5(c)]
Per Ordinance No. 2009-11 Adopted 10/19/09 [Sec. 230.5(b)1&5]
Per Ordinance No. 2010-03 Adopted 6/21/10 [Sec. 230.5(b)]

Sec. 230.5 Water Supply Shortage Response Level 2 – Water Supply Shortage Alert Condition (Cont'd.)

- (d) Upon the declaration of a Water Supply Shortage Response Level 2 condition, no new statements of availability (including, but not limited to as Project Facility Availability “PFA”, Project Facility Commitment “PFC”, District Facility Conceptual Approvals, and Agency Clearance Letters) shall be issued for development projects consisting of but not limited to major subdivisions and major commercial developments, or large multifamily developments requiring meter capacity in excess of four (4) equivalent $\frac{3}{4}$ -inch meters for non-fire fighting requirements unless the applicant(s) provides substantial evidence of an enforceable commitment that the net water demands for the project from the District will be offset prior to the provision of any new water meter(s) for the project. Net water demand determination shall be based upon a water conservation plan prepared by the applicant and approved by the District. Offset of demand may be achieved through:
1. The reallocation of existing base year meter allocation assigned to the property being developed or owned by the applicant;
 2. The development of on-site local potable and non-potable supplies which offset an existing or future demand for imported water; or
 3. Participation in a local or regional net demand offset program or specific project.
- (e) Upon the declaration of a Level 2 condition, only existing and new annexation proposals which can provide to the District additional water resources offsetting the net water demand impact for the specific projects in the annexing area and providing .5 acre feet per year of additional supply per unit of development in the annexing area to meet firm Municipal and Industrial demands within the existing District service area will continue to be processed or have applications considered by the District. For the purposes of this subsection, “additional water resources” shall be defined as:
1. Water resources originating from outside the current service area of the District; and
 2. Water resources resulting from financial support from the annexing lands for local water resource development opportunities within the District determined to be available for annexing territories. Local resource development opportunities available for annexing lands shall be identified after first determining the level of local resource development opportunities which may be required to accommodate development on lands currently within the District boundaries.

Per Ordinance No. 2009-04 Adopted 6/15/09 [Sec. 230.5(d)]

Per Ordinance No. 2009-04 Adopted 6/15/09 [Sec. 230.5(e)]

Sec. 230.6 Water Supply Shortage Response Level 3 – Water Supply Shortage Critical Condition

- (a) A Water Supply Shortage Response Level 3 condition is also referred to as a “Water Supply Shortage Critical” condition. A Level 3 condition applies when the Water Authority notifies its member agencies that due to an actual or anticipated reduction in supplies to the Water Authority, a commensurate consumer demand reduction of up to 40 percent is required in order to balance regional demands with supplies anticipated to be available for the foreseeable future. The District’s Board of Directors shall declare the existence of a Water Supply Shortage Response Level 3 condition and implement the mandatory Level 3 conservation measures identified in this ordinance.
- (b) All persons using District supplied water shall comply on a mandatory basis with Level 1 Water Supply Shortage Watch and Level 2 Water Supply Shortage Alert water conservation practices and measures to achieve up to a 40% reduction in demand during a Level 3 Water Supply Shortage Critical condition, and shall also comply with the following additional mandatory conservation measures:
 - 1. Limit residential and commercial landscape irrigation to no more than three (3) assigned days per week on a schedule established by the General Manager and posted by the District. This section shall not apply to commercial growers or nurseries.
 - 2. Limit lawn watering and landscape irrigation using sprinklers to no more than ten (10) minutes per watering station per assigned day. This provision does not apply to landscape irrigation systems using water efficient devices, including but not limited to: weather based controllers, drip/mirco-irrigation systems and stream rotor sprinklers.
 - 3. Water landscaped areas, including trees and shrubs located on residential and commercial properties, and not irrigated by a landscape irrigation system governed by section 230.6 (b) (1), on the same schedule set forth in section 230.6 (b) (1) by using a bucket, hand-held hose with a positive shut-off nozzle, or low-volume non-spray irrigation.
 - 4. Stop filling or re-filling ornamental lakes or ponds, except to the extent needed to sustain aquatic life, provided that such animals are of significant value and have been actively managed within the water feature prior to declaration of a water supply shortage response level under this ordinance.

Sec. 230.6 Water Supply Shortage Response Level 3 – Water Supply Shortage Critical Condition (Cont'd.)

5. Stop washing vehicles except at commercial carwashes that re-circulate water, or by high pressure/low volume wash systems.
 6. Repair all leaks within forty-eight (48) hours of notification by the District unless other arrangements are made with the General Manager.
 7. Use recycled or non-potable water for construction purposes as defined in Section 230.2(a) of this article.
- (c) Upon declaration of a Level 3 condition, no new statements of ability to serve (PFA, PFC, or Concept Approval) shall be issued for projects with associated water demand. Only projects with existing PFA's, PFC's, or Concept Approvals with no associated direct water usage or those providing substantial evidence of an enforceable commitment that net water demands for the project from the District will be offset prior to the provision of a new water meter(s) to the satisfaction of District through the development of local water resources or participation in local or regional net demand offset program will continue to be processed.
- (d) Upon the declaration of a Level 3 condition, only existing annexation proposals which can provide to the District additional water resources which offset the net water demand impact for the specific projects in the annexing area and provide .5 acre feet per year of additional supply per unit of development in the annexing area to meet firm Municipal and Industrial demand within the existing District service area will continue to be processed. For the purposes of this subsection, "additional water resources" shall be defined as water resources originating from outside the current service area of the Water Authority and not through participation in offset programs within the service area of the District or the Water Authority.
- (e) Upon the declaration of a Water Supply Shortage Response Level 3 condition, no new temporary or permanent potable water meters shall be provided, except under the following circumstances:
1. A meter has been purchased, a valid, agency clearance letter or some other form of service commitment has been previously issued by the District, or meter is for a project meeting the requirements of sub-sections 230.6 (c) and (d), above.
 2. The meter is for a project that is necessary to protect the public's health, safety, and welfare.

Per Ordinance No. 2010-03 Adopted 6/21/10 [Sec. 230.6(b)]

Per Ordinance No. 2010-03 Adopted 6/21/10 [Sec. 230.6(d)]

Sec. 230.7

Water Supply Shortage Response Level 4 – Water Supply Shortage Emergency Condition

- (a) A Water Supply Shortage Response Level 4 condition is also referred to as a “Water Supply Shortage Emergency” condition. A Level 4 condition applies when the Water Authority Board of Directors declares a water shortage emergency and notifies its member agencies that a demand reduction of more than 40 percent is required in order to balance regional demands with the supplies anticipated to be available to the Water Authority for the foreseeable future.
- (b) All persons using District supplied water shall comply on a mandatory basis with conservation practices and measures required during Level 1 Water Supply Shortage Watch, Level 2 Water Supply Shortage Alert, and Level 3 Water Supply Shortage Critical conditions and shall also comply with the following additional mandatory conservation measures:
 - 1. Stop all landscape irrigation, except crops and landscape products of commercial growers and nurseries. This restriction shall not apply to the following categories of use unless the District has determined that reclaimed water is available and may be lawfully applied to the use.
 - A. Maintenance of trees and shrubs that are watered on the same schedule set forth in section 230.6 (b) (1) by using a bucket, hand-held hose with a positive shut-off nozzle, or low-volume non-spray irrigation;
 - B. Maintenance of existing landscaping necessary for fire protection as specified by the Fire Marshal of the local fire protection agency having jurisdiction over the property to be irrigated;
 - C. Maintenance of existing landscaping for erosion control;
 - D. Maintenance of plant materials identified to be rare or essential to the well being of rare animals;
 - E. Maintenance of landscaping within active public parks and playing fields, day care centers, school grounds, cemeteries, and golf course greens, provided that such irrigation does not exceed two (2) days per week according to the schedule established under section 230.6 (b) (1);
 - F. Watering of livestock; and
 - G. Public works projects and actively irrigated environmental mitigation projects.
 - 2. Repair all water leaks within twenty-four (24) hours of notification by the District unless other arrangements are made with the General Manager.

Article 230 Water Supply Shortage Response Program (Cont'd.)

Sec. 230.7 Water Supply Shortage Response Level 4 – Water Supply Shortage Emergency Condition (Cont'd.)

- (c) Upon the declaration of a Water Supply Shortage Response Level 4 condition, any and all development and annexation processing with associated direct water usage shall be terminated and no new temporary or permanent potable water meters shall be provided under any circumstance until the Level 4 condition abates, except for those meters for projects required to protect public health and safety.

Sec. 230.8 Procedures for Determination and Notification of Water Supply Shortage Response Level

- (a) The existence of a Water Supply Shortage Response Level 1 condition may be declared by the General Manager upon a written determination of the existence of the facts and circumstances supporting the determination. A copy of the written determination shall be filed with the Clerk or Secretary of the District and provided to the District Board of Directors. The General Manager may publish a notice of the determination of existence of Water Supply Shortage Response Level 1 condition in one or more newspapers, including a newspaper of general circulation within the District. The District may also post notice of the condition on their website.
- (b) The existence of a Water Supply Shortage Response Level 2, 3, or 4 condition may be declared in accordance with the procedures specified in California Water Code sections 351 and 352. Following at least (7) days notice of the meeting at which the declaration will be made, the District Board of Directors may declare the existence of a Water Supply Shortage Response Level 2, 3, or 4 condition by the adoption of a resolution at any regular or special meeting held in accordance with State law. The mandatory conservation measures applicable to Water Supply Shortage Response Level 4 conditions shall take effect on the tenth (10) day after the date the response level is declared. The General Manager may publish a notice of the determination of the existence of Water Supply Shortage Response Level 2, 3, or 4 condition in one or more newspapers, including a newspaper of general circulation within the District. The District may also post notice of the condition on their website. If the District establishes a water allocation, it shall provide notice by mailing to the address to which the District customarily mails the billing statement for fees or charges for on-going water service. Water allocation shall be effective on the fifth (5) day following the date of mailing or at such later date as specified in the notice.
- (c) The District Board of Directors may declare an end to a Water Supply Shortage Response Level by the adoption of a resolution at any regular or special meeting held in accordance with State law.

Sec. 230.9 Hardship Variance

- (a) If, due to unique circumstances, a specific requirement of this ordinance would result in undue hardship to a person using agency water or to property upon which agency water is used, that is disproportionate to the impacts to District water users generally or to similar property or classes of water uses, then the person may apply for a variance to the requirements as provided in this section.
- (b) The variance may be granted or conditionally granted, only upon a written finding of the existence of facts demonstrating an undue hardship to a person using agency water or to property upon which agency water is used, that is disproportionate to the impacts to District water users generally or to similar property or classes of water use due to specific and unique circumstances of the user or the user's property.
 - 1. Application. Application for a variance shall be a form prescribed by the District.
 - 2. Supporting Documentation. The application shall be accompanied by photographs, maps, drawings, and other information, including a written statement of the applicant.
 - 3. Required Findings for Variance. An application for a variance shall be denied unless the approving authority finds, based on the information provided in the application, supporting documents, or such additional information as may be requested, and on water use information for the property as shown by the records of the District, all of the following:
 - A. That the variance does not constitute a grant of special privilege inconsistent with the limitations upon other District customers.
 - B. That because of special circumstances applicable to the property or its use, the strict application of this ordinance would have a disproportionate impact on the property or use that exceeds the impacts to customers generally.
 - C. That the authorizing of such variance will not be of substantial detriment to adjacent properties, and will not materially affect the ability of the District to effectuate the purpose of this chapter and will not be detrimental to the public interest.
 - D. That the condition or situation of the subject property or the intended use of the property for which the variance is sought is not common, recurrent or general in nature.

Sec. 230.9 Hardship Variance (Cont'd.)

4. Approval Authority. The General Manager shall exercise approval authority and act upon any completed application no later than 10 days after submittal and may approve, conditionally approve, or deny the variance. The applicant requesting the variance shall be promptly notified in writing of any action taken. Unless specified otherwise at the time a variance is approved, the variance applies to the subject property during the term of the mandatory Water Supply Shortage response.

Sec. 230.10 Enforcement

- (a) As provided in Water Code Section 377, any violation of Sections 230.5, 230.6, or 230.7 Water Conservation Measures of this ordinance is a misdemeanor. Upon conviction thereof, such person may be punished by imprisonment in the county jail for not more than 30 days, or by fine not exceeding one thousand dollars (\$1,000) or both.
- (b) Each day that a violation of this ordinance occurs is a separate offense.
- (c) In addition or as an alternative, the District may install flow restrictors or discontinue water service at any time.
- (d) Prior to seeking criminal enforcement of the provisions of Sections 230.5, 230.6, and 230.7 the District may impose progressive enforcement measures for repeated, willful violations as follows:

First Violation: Citation

Second Violation: Penalty of \$100 placed on the
water bill

Third Violation: Penalty of \$250 placed on the water bill.

Fourth Violation: Penalty of \$500 placed on the water bill, and after a 15
day written notification, a flow restriction of 5 gallons
per minute for 120 hours (5 days) and the customer will
be charged for the installation and removal of the flow
restrictor.

Fifth Violation: Penalty of \$1,000 placed on water bill, and after a 15
day written notification, complaint filed with the County
of San Diego District Attorney's office, flow restriction
imposed and sustained to 5 gallons per minute until
disposition of complaint and the customer will be
charged for the installation and removal of the flow
restrictor.

Sec. 230.10 Enforcement (Cont'd.)

- (e) Willful violations of the mandatory conservation measures and water use restrictions as set forth in Section 230.7 and applicable during a Level 4 Water Supply Shortage Emergency condition may be enforced by discontinuing service to the property at which the violation occurs as provided by Water Code section 356.
- (f) All remedies provided for herein shall be cumulative and not exclusive.

Sec. 230.11 Administrative Procedures

- (a) Persons using District supplied water may appeal a staff response to a request for variance, determination of allocation, ordinance implementation provisions and decisions made by VCMWD staff, such as imposition of penalties, noticed flow reduction, discontinuance of service or prosecution.
- (b) The appeal process shall be as follows:
 - 1. Decisions made by District staff can be appealed in writing on a form provided by the District to Director of Finance, or his designee. All appeals shall be filed within 15 calendar days of the date of the provision or decision being appealed. The Director of Finance shall then have 30 calendar days to render a written decision on the appeal.
 - 2. Decisions by the Director of Finance may be appealed to the General Manager, or his designee, within 15 calendar days of the date of the decision by the Director of Finance. The General Manager shall then have 30 calendar days to render a written decision to the appeal of decision by the Director of Finance.
 - 3. All decisions by General Manager may be appealed to the Board of Directors. Requests for appeals to the Board shall be made in writing and will be placed on an agenda for review and action at a subsequent meeting of the Board. The decision by the Board shall be final.
 - 4. During the appeal process, all provisions and decisions under appeal shall remain in full effect until the conclusion of the appeal process.

Article 235

Emergency Water Management Plan

Sec. 235.1

Purpose. California Water Code Sections 375 et seq. permit public entities which supply water at retail to adopt and enforce a water conservation program to reduce the quantity of water used by the people therein for the purpose of conserving the water supplies of such public entity. The Board hereby establishes a comprehensive emergency water management plan to be implemented in case of an emergency pursuant to California Water Code Sections 375 et seq., based upon the need to conserve water supplies during the emergency.

Sec. 235.2

Application. The provisions of this Article shall apply to all water served to persons, customers, and property by the District.

Sec. 235.3

Authorization. The District's General Manager, or a designated representative, is hereby authorized and directed to implement the provisions of the Emergency Water Management Plan. Additionally, the General Manager, or a designated representative, is hereby authorized to make minor and limited exceptions to prevent undue hardship or unreasonable restrictions, provided that water shall not be wasted or used unreasonably and the purpose of this ordinance can be accomplished.

Sec. 235.4

Water Emergency Measures. No person shall knowingly use water or permit the use of water supplied by the District for commercial, industrial, agricultural, governmental, or any other purpose in a manner contrary to any provision of this article, in an amount in excess of the amounts authorized by this article, or during any period of time other than the periods of time specified in this article. At no time shall water be wasted or used unreasonably.

It is anticipated that these measures will result in a reduction in water use from a base period to be determined at the time of declaration. During the emergency, the following measures shall apply except when reclaimed or private well water is used:

1. All outdoor landscape irrigation is prohibited.
2. Use of water for agricultural or commercial nursery purposes shall be permitted under conditions set forth by the District based upon the severity and anticipated duration of the shortage. Livestock watering will be permitted on an as needed basis with a prohibition against non-essential use.

Sec. 235.4

Water Emergency Measures

3. Washing of autos, trucks, trailers, boats, airplanes and other types of mobile equipment is prohibited. Such washings are exempted from these regulations where the health, safety and welfare of the public is contingent upon frequent vehicle cleaning such as garbage trucks and vehicles used to transport food and perishables.
4. Filling, refilling or adding of water to swimming pools, spas, ponds and artificial lakes is prohibited.
5. Watering of all golf course areas, except greens, is prohibited. Watering of parks, school grounds and recreation fields is prohibited with the exception of plant materials classified to be rare, exceptionally valuable, or essential to the well being of rare animals.
6. The use of water from fire hydrants shall be limited to fire fighting or to maintain the health, safety and welfare of the public.
7. Restaurants shall not serve water to their customers except when specifically requested.
8. The operation of any ornamental fountain or similar structure is prohibited.
9. New construction meters or permits for unmetered service will not be issued. Construction water shall not be used for earth work or road construction purposes.
10. The use of water for commercial manufacturing or processing purposes shall be permitted under conditions set forth by the District based upon the severity and anticipated duration of the shortage.

Sec. 235.5

Implementation of Emergency Water Management Program. The District shall monitor the projected supply and demand for water by its customers on a daily basis. The General Manager shall determine the extent of the emergency conservation required in order for the District to prudently plan for and supply water to its customers. Thereafter, the General Manager may order that the Emergency Water Management Plan be implemented or terminated in accordance with the applicable provision of this Article. The declaration of a water emergency shall be made by public announcement and notice shall be published a minimum of one (1) time in a newspaper of general circulation and shall become effective immediately upon announcement. The declaration shall be reported to the Board at its next regular meeting. The Board shall thereupon ratify the declaration or rescind the declaration, and may adopt such additional rules and regulations to limit water use during the emergency as it deems appropriate.

Sec. 235.6

Enforcement. As provided in Water Code Section 377, any violation of the Water Emergency Measures, found in Section 235.4 of this Emergency Water Management Plan, is a misdemeanor. Upon conviction thereof, such person shall be punished by imprisonment in the county jail for not more than 30 days, or by fine not exceeding one thousand dollars (\$1,000) or both. In addition, or as an alternative, the District may install flow restrictors or discontinue water service at any time. Prior to seeking criminal enforcement of the provisions of Section 235.4, Water Emergency Measures, the District may impose progressive enforcement measures for repeated, willful violations as follows:

First Violation:	Citation
Second Violation:	Penalty equal to 25% of previous month's water bill and service of water limited to not less than 5 GPM and not more than 10 GPM for a period not to exceed 72 hours.
Third Violation:	Penalty equal to 50% of the previous month's water bill and service of water terminated for a period not to exceed 48 hours.

Appendix F

Urban Water Management Plan Checklist

Table E-1 Urban Water Management Plan checklist, organized by legislation number

No.	UWMP requirement ^a	Calif. Water Code reference	Subject ^b	Additional clarification	UWMP location
1	Provide baseline daily per capita water use, urban water use target, interim urban water use target, and compliance daily per capita water use, along with the bases for determining those estimates, including references to supporting data.	10608.20(e)	System Demands		Section 3.3
2	<i>Wholesalers:</i> Include an assessment of present and proposed future measures, programs, and policies to help achieve the water use reductions. <i>Retailers:</i> Conduct at least one public hearing that includes general discussion of the urban retail water supplier's implementation plan for complying with the Water Conservation Bill of 2009.	10608.36 10608.26(a)	System Demands	Retailer and wholesalers have slightly different requirements	Section 3.3
3	Report progress in meeting urban water use targets using the standardized form.	10608.40	Not applicable	Standardized form not yet available	
4	Each urban water supplier shall coordinate the preparation of its plan with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable.	10620(d)(2)	Plan Preparation		Section 1.3
5	An urban water supplier shall describe in the plan water management tools and options used by that entity that will maximize resources and minimize the need to import water from other regions.	10620(f)	Water Supply Reliability		Section 4.7
6	Every urban water supplier required to prepare a plan pursuant to this part shall, at least 60 days prior to the public hearing on the plan required by Section 10642, notify any city or county within which the supplier provides water supplies that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan. The urban water supplier may consult with, and obtain comments from, any city or county that receives notice pursuant to this subdivision.	10621(b)	Plan Preparation		Section 1.2
7	The amendments to, or changes in, the plan shall be adopted and filed in the manner set forth in Article 3 (commencing with Section 10640).	10621(c)	Plan Preparation		Sections 1.2 and 1.5

No.	UWMP requirement ^a	Calif. Water Code reference	Subject ^b	Additional clarification	UWMP location
8	Describe the service area of the supplier	10631(a)	System Description		Section 2.1
9	(Describe the service area) climate	10631(a)	System Description		Section 2.2
10	(Describe the service area) current and projected population . . . The projected population estimates shall be based upon data from the state, regional, or local service agency population projections within the service area of the urban water supplier . . .	10631(a)	System Description	Provide the most recent population data possible. Use the method described in "Baseline Daily Per Capita Water Use." See Section M.	Section 3.1
11	. . . (population projections) shall be in five-year increments to 20 years or as far as data is available.	10631(a)	System Description	2035 and 2040 can also be provided to support consistency with Water Supply Assessments and Written Verification of Water Supply documents.	Section 3.1
12	Describe . . . other demographic factors affecting the supplier's water management planning	10631(a)	System Description		Section 3.1
13	Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier over the same five-year increments described in subdivision (a).	10631(b)	System Supplies	The 'existing' water sources should be for the same year as the "current population" in line 10. 2035 and 2040 can also be provided to support consistency with Water Supply Assessments and Written Verification of Water Supply documents.	Section 4.0
14	(Is) groundwater . . . identified as an existing or planned source of water available to the supplier . . . ?	10631(b)	System Supplies	Source classifications are: surface water, groundwater, recycled water, storm water, desalinated sea water, desalinated brackish groundwater, and other.	Section 4.3

No.	UWMP requirement ^a	Calif. Water Code reference	Subject ^b	Additional clarification	UWMP location
15	(Provide a) copy of any groundwater management plan adopted by the urban water supplier, including plans adopted pursuant to Part 2.75 (commencing with Section 10750), or any other specific authorization for groundwater management. Indicate whether a groundwater management plan been adopted by the water supplier or if there is any other specific authorization for groundwater management. Include a copy of the plan or authorization.	10631(b)(1)	System Supplies		Not Applicable (Section 4.3 discusses there are no groundwater management plans)
16	(Provide a) description of any groundwater basin or basins from which the urban water supplier pumps groundwater.	10631(b)(2)	System Supplies		Not Applicable
17	For those basins for which a court or the board has adjudicated the rights to pump groundwater, (provide) a copy of the order or decree adopted by the court or the board	10631(b)(2)	System Supplies		Not Applicable
18	(Provide) a description of the amount of groundwater the urban water supplier has the legal right to pump under the order or decree.	10631(b)(2)	System Supplies		Not Applicable
19	For basins that have not been adjudicated, (provide) information as to whether the department has identified the basin or basins as overdrafted or has projected that the basin will become overdrafted if present management conditions continue, in the most current official departmental bulletin that characterizes the condition of the groundwater basin, and a detailed description of the efforts being undertaken by the urban water supplier to eliminate the long-term overdraft condition.	10631(b)(2)	System Supplies		Not Applicable
20	(Provide a) detailed description and analysis of the location, amount, and sufficiency of groundwater pumped by the urban water supplier for the past five years. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.	10631(b)(3)	System Supplies		Not Applicable
21	(Provide a) detailed description and analysis of the amount and location of groundwater that is projected to be pumped by the urban water supplier. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.	10631(b)(4)	System Supplies	Provide projections for 2015, 2020, 2025, and 2030.	Not Applicable

No.	UWMP requirement ^a	Calif. Water Code reference	Subject ^b	Additional clarification	UWMP location
22	Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage, to the extent practicable, and provide data for each of the following: (A) An average water year, (B) A single dry water year, (C) Multiple dry water years.	10631(c)(1)	Water Supply Reliability		Section 4.7
23	For any water source that may not be available at a consistent level of use - given specific legal, environmental, water quality, or climatic factors - describe plans to supplement or replace that source with alternative sources or water demand management measures, to the extent practicable.	10631(c)(2)	Water Supply Reliability		Section 4.7
24	Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.	10631(d)	System Supplies		Section 4.2
25	Quantify, to the extent records are available, past and current water use, and projected water use (over the same five-year increments described in subdivision (a)), identifying the uses among water use sectors, including, but not necessarily limited to, all of the following uses: (A) Single-family residential; (B) Multifamily; (C) Commercial; (D) Industrial; (E) Institutional and governmental; (F) Landscape; (G) Sales to other agencies; (H) Saline water intrusion barriers, groundwater recharge, or conjunctive use, or any combination thereof; (I) Agricultural.	10631(e)(1)	System Demands	Consider “past” to be 2005, present to be 2010, and projected to be 2015, 2020, 2025, and 2030. Provide numbers for each category for each of these years.	Sections 3.2 and 3.4

No.	UWMP requirement ^a	Calif. Water Code reference	Subject ^b	Additional clarification	UWMP location
26	(Describe and provide a schedule of implementation for) each water demand management measure that is currently being implemented, or scheduled for implementation, including the steps necessary to implement any proposed measures, including, but not limited to, all of the following: (A) Water survey programs for single-family residential and multifamily residential customers; (B) Residential plumbing retrofit; (C) System water audits, leak detection, and repair; (D) Metering with commodity rates for all new connections and retrofit of existing connections; (E) Large landscape conservation programs and incentives; (F) High-efficiency washing machine rebate programs; (G) Public information programs; (H) School education programs; (I) Conservation programs for commercial, industrial, and institutional accounts; (J) Wholesale agency programs; (K) Conservation pricing; (L) Water conservation coordinator; (M) Water waste prohibition; (N) Residential ultra-low-flush toilet replacement programs.	10631(f)(1)	DMMs	Discuss each DMM, even if it is not currently or planned for implementation. Provide any appropriate schedules.	Section 6.0
27	A description of the methods, if any, that the supplier will use to evaluate the effectiveness of water demand management measures implemented or described under the plan.	10631(f)(3)	DMMs		Section 6.0
28	An estimate, if available, of existing conservation savings on water use within the supplier's service area, and the effect of the savings on the supplier's ability to further reduce demand.	10631(f)(4)	DMMs		Section 6.0

No.	UWMP requirement ^a	Calif. Water Code reference	Subject ^b	Additional clarification	UWMP location
29	An evaluation of each water demand management measure listed in paragraph (1) of subdivision (f) that is not currently being implemented or scheduled for implementation. In the course of the evaluation, first consideration shall be given to water demand management measures, or combination of measures, that offer lower incremental costs than expanded or additional water supplies. This evaluation shall do all of the following: (1) Take into account economic and noneconomic factors, including environmental, social, health, customer impact, and technological factors; (2) Include a cost-benefit analysis, identifying total benefits and total costs; (3) Include a description of funding available to implement any planned water supply project that would provide water at a higher unit cost; (4) Include a description of the water supplier's legal authority to implement the measure and efforts to work with other relevant agencies to ensure the implementation of the measure and to share the cost of implementation.	10631(g)	DMMs	See 10631(g) for additional wording.	Section 6.0
30	(Describe) all water supply projects and water supply programs that may be undertaken by the urban water supplier to meet the total projected water use as established pursuant to subdivision (a) of Section 10635. The urban water supplier shall include a detailed description of expected future projects and programs, other than the demand management programs identified pursuant to paragraph (1) of subdivision (f), that the urban water supplier may implement to increase the amount of the water supply available to the urban water supplier in average, single-dry, and multiple-dry water years. The description shall identify specific projects and include a description of the increase in water supply that is expected to be available from each project. The description shall include an estimate with regard to the implementation timeline for each project or program.	10631(h)	System Supplies		Section 4.8
31	Describe the opportunities for development of desalinated water, including, but not limited to, ocean water, brackish water, and groundwater, as a long-term supply.	10631(i)	System Supplies		Section 4.4

No.	UWMP requirement ^a	Calif. Water Code reference	Subject ^b	Additional clarification	UWMP location
32	Include the annual reports submitted to meet the Section 6.2 requirement (of the MOU), if a member of the CUWCC and signer of the December 10, 2008 MOU.	10631(j)	DMMs	Signers of the MOU that submit the annual reports are deemed compliant with Items 28 and 29.	Appendix D
33	Urban water suppliers that rely upon a wholesale agency for a source of water shall provide the wholesale agency with water use projections from that agency for that source of water in five-year increments to 20 years or as far as data is available. The wholesale agency shall provide information to the urban water supplier for inclusion in the urban water supplier's plan that identifies and quantifies, to the extent practicable, the existing and planned sources of water as required by subdivision (b), available from the wholesale agency to the urban water supplier over the same five-year increments, and during various water-year types in accordance with subdivision (c). An urban water supplier may rely upon water supply information provided by the wholesale agency in fulfilling the plan informational requirements of subdivisions (b) and (c).	10631(k)	System Demands	Average year, single dry year, multiple dry years for 2015, 2020, 2025, and 2030.	Sections 3.4, 4.7, and 7.1
34	The water use projections required by Section 10631 shall include projected water use for single-family and multifamily residential housing needed for lower income households, as defined in Section 50079.5 of the Health and Safety Code, as identified in the housing element of any city, county, or city and county in the service area of the supplier.	10631.1(a)	System Demands		Section 3.4.4
35	Stages of action to be undertaken by the urban water supplier in response to water supply shortages, including up to a 50 percent reduction in water supply, and an outline of specific water supply conditions which are applicable to each stage.	10632(a)	Water Supply Reliability		Section 7.3.1
36	Provide an estimate of the minimum water supply available during each of the next three water years based on the driest three-year historic sequence for the agency's water supply.	10632(b)	Water Supply Reliability		Section 4.7
37	(Identify) actions to be undertaken by the urban water supplier to prepare for, and implement during, a catastrophic interruption of water supplies including, but not limited to, a regional power outage, an earthquake, or other disaster.	10632(c)	Water Supply Reliability		Section 7.3.3

No.	UWMP requirement ^a	Calif. Water Code reference	Subject ^b	Additional clarification	UWMP location
38	(Identify) additional, mandatory prohibitions against specific water use practices during water shortages, including, but not limited to, prohibiting the use of potable water for street cleaning.	10632(d)	Water Supply Reliability		Section 7.3.4
39	(Specify) consumption reduction methods in the most restrictive stages. Each urban water supplier may use any type of consumption reduction methods in its water shortage contingency analysis that would reduce water use, are appropriate for its area, and have the ability to achieve a water use reduction consistent with up to a 50 percent reduction in water supply.	10632(e)	Water Supply Reliability		Section 7.3.4
40	(Indicated) penalties or charges for excessive use, where applicable.	10632(f)	Water Supply Reliability		Section 7.3.4
41	An analysis of the impacts of each of the actions and conditions described in subdivisions (a) to (f), inclusive, on the revenues and expenditures of the urban water supplier, and proposed measures to overcome those impacts, such as the development of reserves and rate adjustments.	10632(g)	Water Supply Reliability		Section 7.3.5
42	(Provide) a draft water shortage contingency resolution or ordinance.	10632(h)	Water Supply Reliability		Section 7.3.2 and Appendix F
43	(Indicate) a mechanism for determining actual reductions in water use pursuant to the urban water shortage contingency analysis.	10632(i)	Water Supply Reliability		Section 7.3.6
44	Provide, to the extent available, information on recycled water and its potential for use as a water source in the service area of the urban water supplier. The preparation of the plan shall be coordinated with local water, wastewater, groundwater, and planning agencies that operate within the supplier's service area	10633	System Supplies		Section 5.0
45	(Describe) the wastewater collection and treatment systems in the supplier's service area, including a quantification of the amount of wastewater collected and treated and the methods of wastewater disposal.	10633(a)	System Supplies		Section 5.2

No.	UWMP requirement ^a	Calif. Water Code reference	Subject ^b	Additional clarification	UWMP location
46	(Describe) the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project.	10633(b)	System Supplies		Section 5.2
47	(Describe) the recycled water currently being used in the supplier's service area, including, but not limited to, the type, place, and quantity of use.	10633(c)	System Supplies		Section 5.3
48	(Describe and quantify) the potential uses of recycled water, including, but not limited to, agricultural irrigation, landscape irrigation, wildlife habitat enhancement, wetlands, industrial reuse, groundwater recharge, indirect potable reuse, and other appropriate uses, and a determination with regard to the technical and economic feasibility of serving those uses.	10633(d)	System Supplies		Section 5.3
49	(Describe) The projected use of recycled water within the supplier's service area at the end of 5, 10, 15, and 20 years, and a description of the actual use of recycled water in comparison to uses previously projected pursuant to this subdivision.	10633(e)	System Supplies		Section 5.3
50	(Describe the) actions, including financial incentives, which may be taken to encourage the use of recycled water, and the projected results of these actions in terms of acre-feet of recycled water used per year.	10633(f)	System Supplies		Sections 5.4 and 5.6
51	(Provide a) plan for optimizing the use of recycled water in the supplier's service area, including actions to facilitate the installation of dual distribution systems, to promote recirculating uses, to facilitate the increased use of treated wastewater that meets recycled water standards, and to overcome any obstacles to achieving that increased use.	10633(g)	System Supplies		Section 5.6
52	The plan shall include information, to the extent practicable, relating to the quality of existing sources of water available to the supplier over the same five-year increments as described in subdivision (a) of Section 10631, and the manner in which water quality affects water management strategies and supply reliability.	10634	Water Supply Reliability	For years 2010, 2015, 2020, 2025, and 2030	Section 4.5

No.	UWMP requirement ^a	Calif. Water Code reference	Subject ^b	Additional clarification	UWMP location
53	Every urban water supplier shall include, as part of its urban water management plan, an assessment of the reliability of its water service to its customers during normal, dry, and multiple dry water years. This water supply and demand assessment shall compare the total water supply sources available to the water supplier with the total projected water use over the next 20 years, in five-year increments, for a normal water year, a single dry water year, and multiple dry water years. The water service reliability assessment shall be based upon the information compiled pursuant to Section 10631, including available data from state, regional, or local agency population projections within the service area of the urban water supplier.	10635(a)	Water Supply Reliability .		Section 7.0
54	The urban water supplier shall provide that portion of its urban water management plan prepared pursuant to this article to any city or county within which it provides water supplies no later than 60 days after the submission of its urban water management plan.	10635(b)	Plan Preparation		Section 1.2
55	Each urban water supplier shall encourage the active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan.	10642	Plan Preparation		Section 1.3
56	Prior to adopting a plan, the urban water supplier shall make the plan available for public inspection and shall hold a public hearing thereon. Prior to the hearing, notice of the time and place of hearing shall be published within the jurisdiction of the publicly owned water supplier pursuant to Section 6066 of the Government Code. The urban water supplier shall provide notice of the time and place of hearing to any city or county within which the supplier provides water supplies. A privately owned water supplier shall provide an equivalent notice within its service area.	10642	Plan Preparation		Section 1.2
57	After the hearing, the plan shall be adopted as prepared or as modified after the hearing.	10642	Plan Preparation		Section 1.5
58	An urban water supplier shall implement its plan adopted pursuant to this chapter in accordance with the schedule set forth in its plan.	10643	Plan Preparation		Section 1.5

No.	UWMP requirement ^a	Calif. Water Code reference	Subject ^b	Additional clarification	UWMP location
59	An urban water supplier shall submit to the department, the California State Library, and any city or county within which the supplier provides water supplies a copy of its plan no later than 30 days after adoption. Copies of amendments or changes to the plans shall be submitted to the department, the California State Library, and any city or county within which the supplier provides water supplies within 30 days after adoption.	10644(a)	Plan Preparation		Section 1.5
60	Not later than 30 days after filing a copy of its plan with the department, the urban water supplier and the department shall make the plan available for public review during normal business hours.	10645	Plan Preparation		Section 1.5

a The UWMP Requirement descriptions are general summaries of what is provided in the legislation. Urban water suppliers should review the exact legislative wording prior to submitting its UWMP.

b The Subject classification is provided for clarification only. It is aligned with the organization presented in Part I of this guidebook. A water supplier is free to address the UWMP Requirement anywhere with its UWMP, but is urged to provide clarification to DWR to facilitate review.